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W. S. Reynolds

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AUGUST, 1859.

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THE FARMER AND PLANTER



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TO DISTRICT AGRICULTURAL SOCIETIES.

Will the Secretaries of the several Agricultural Societies of the State, oblige the conductors of this journal, by informing us of the time and place of holding the next Annual Meeting of their Societies?

It is our intention to attend the meetings of every District and other Agricultural Societies, this Fall, if possible, and collect such matter for our journal as may be valuable for preservation in a permanent form; also, to present the claims of the *Farmer and Planter* to the patronage of the planters and farmers of every section of the State.

Should it occur, that two Societies, in different Districts, meet on the same day, as we are not ubiquitous, will not some kind friend act for us where we are absent. Such favors will be highly appreciated, and much good could be done.

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VOL. X.

AUGUST, 1859.

NO. 8.

R. M. STOKES, }
PROPRIETOR.

COLUMBIA, S. C.

{ NEW SERIES
VOL. 1, No. 8.

For the Farmer and Planter.

MEANS OF IMPROVING OUR SOIL.

An Address delivered before the Black Oak Agricultural Society, at its Anniversary Meeting, April 26th, 1859, by JULIUS T. PORCHER.

MR. PRESIDENT AND GENTLEMEN:—In undertaking the task you appointed me at our last meeting, I thought the subject most profitable for my own study and your consideration, to-day, was the deterioration of our soil, and the methods, if any, of restoring its fertility.

That such deterioration has taken place, I think needs no argument to prove; we see around us, on every side, fields which once produced readily 150 lbs. of cotton, now abandoned, as not worth the trouble of cultivation; we see whole plantations which, in the time of our fathers and grandfathers, were looked upon as standards of comparison, now sold for almost nothing; and we are perfectly astonished when we learn, that the tract of land containing the Eutaw Springs, was once sold for \$50 an acre. Why, too, is it, we hear and inquire so much after the virgin soils of Florida, and the more distant West? And why, I may ask, are we here assembled to-day, if it is not that we have been aroused to the conviction that our own native soil has done for us all she can do, unaided as she has been, comparatively, and that we must now do something for her in return, or else abandon her forever?

This condition of things is the more important, from the fact that it is not confined to our community, or even to our own State; it is an evil which pervades our whole country. Those of you who have read *De Bow's Review*, within the last year or two, have there seen the arguments to prove that in

the majority of the States this deterioration has been exactly in proportion to their age; that notwithstanding the increasing use of guano and other fertilizers, the average crops of the whole Union have declined with a steadiness which is alarming; and that even the rich lands of the West are gradually but most surely giving way, under the pressure which is made upon them. Mississippi, Tennessee and others, like Carolina, are already overspread with abandoned fields and yawning gullies. Ohio can scarcely produce wheat any longer, with profit; Wisconsin gets but half the yield she once did, per acre; and in Indiana, the bottoms which formerly produced sixty bushels of corn now make but forty. It is, indeed, only in some of the Eastern and Middle States that anything like successful efforts have been made to arrest this downward progress; but even they have, as yet, made no advance forward—they have as it were but turned against the current, and are now striving to regain the point from which they started.

The cause of this general deterioration, it seems to me, is as evident as the fact, and lies not so much in the mode of working the land as in the system of cultivation, if system it can be called, which has been followed. A piece of land from its texture, situation, or other cause, is found suitable to the production of some particular crop—cotton, rice or corn—and is accordingly sown again and again with the same seed, but with little or no manure, till its soil is exhausted, and it yields not half of what it did at first, though well stirred with the plow, and worked even more carefully than before. But the farmer, instead of setting himself to restore it by returning to it, in the shape of dung, or otherwise some of those ingredients he has removed, finds it

much easier and more in accordance with custom, to bring, I might say break, in a part of his wooded land, which he subjects in turn to the same grinding process the first had undergone. This is repeated till all his available land is exhausted, and his neighbor having done the same, he finds it impossible to purchase anything worth having, and therefore, in order to improve his condition, he must move to comparatively unsettled States, or buy guano—so at least he thinks—and accordingly does one or the other. This, gentlemen, I believe to be no exaggerated sketch of the mode of cultivation generally pursued in this country, and though there are some exceptions to this as to all rules, there are but few.

As to the first of the two modes of effecting this improvement—moving—I will only say that, independently of the desire which most men feel, to remain in the land of their birth, and the consequent sacrifice of old associations, which this remedy would demand, the benefit would be but temporary, unless, indeed, we intend to follow some other system than that pursued at home, for our western country is already old enough to show that even our best lands are not inexhaustible, and that without manure they must deteriorate more or less rapidly.

And what shall we say of guano? A few years ago this seemed to be the panacea for all the ills of over-cropping, and again I find in our community a growing inclination to have recourse to it. But though we hear of immense profits arising from its use in some parts even of our own State, and have reason to believe that the accounts are correct, still there are very few of us who have felt warranted, by our own experience, in incurring the expense. And even beyond our own community I know many practical farmers who question very seriously its remunerative powers. On some excellent farms in the neighborhood of Baltimore, for instance, its use has been discontinued, and lime alone is now used as a fertilizer. Some of the farmers of Virginia are of the opinion that it is remunerative only when used in connection with clover, for of this it helps to secure a good stand. A gentleman there told me, that after using it for several years with great advantage, his land would now produce almost nothing without it, and that even with it the yield was but little above what it had been previous to its introduction. And in Peru, where it has been used longer than anywhere else, from four hundred to four hundred and fifty pounds is now the usual quantity applied to an acre. From these and other facts which have come under my notice, and from a careful consideration of the subject by all the means

at my command, I am forced to the conviction that, though guano may be very profitably employed, under certain circumstances, as a fertilizer, there are some soils on which its use does not at any time warrant the expense; and that generally, it cannot be relied upon to maintain the fertility even of those soils which it had at first improved, the increasing quantity necessary rendering the expense insupportable.

What, then, are we to do? for it is certain we must do something, or continue our downward course. In endeavoring to answer this question satisfactorily, I would most naturally have preferred drawing my experience from those who, like ourselves, are cultivators of cotton, or at least cultivators of similar soils, and under a similar climate. But it is evident, if we wish to improve, we must study the example of those only who have themselves improved; and I have found among the cotton planters so few exceptions to the general rule of deterioration, which is stamped upon our entire country, that I have been forced to turn to England, notwithstanding the difference of climate and products, for there only do I find agriculture on the high-road of progress, not merely with a few individuals or in a few favored districts, but with a whole nation; and possessing, moreover, a literature which marks that progress, by the study of which others may be instructed.

I shall say nothing of the system of composting, so extensively carried on by some of us, for though it has enabled us to plant the same land a number of years in succession, an advantage by no means to be despised, and one which should induce us to continue it till we have found something better, still its most zealous advocates do not claim that it has improved the original fertility of our soils, and it is indeed doubtful whether it has in most cases even enabled them to hold their own.

It is then to the system of agriculture pursued in England that I would invite your attention, believing that in its adoption, to a greater or less extent, lies the remedy to the evils under which we now suffer. I am aware that many will at once say it is impossible for us to adopt this system, for though it may be well suited to England and her crops, it is altogether inapplicable to ours. To this I would only reply that England once suffered as we now do, with an exhausted soil, and that after years of toil and experience she succeeded not only in restoring but in improving its natural fertility; further, that this improvement of soil, and not the growth of any particular crop, is what we are aiming at; for, if our soil be rich, we can cultivate al-

most anything we wish ; and lastly, that the principles of agricultural chemistry and vegetable physiology are the same all over the world, and therefore we have no right, until we have tried it, to say that any system, like that of England for instance, which is in accordance with these principles, and which has proved beneficial elsewhere, would not be suitable to the improvement of our soils also.

The fundamental principles of this English system are, the application of farm-yard dung ; the feeding a larger number of cattle to produce this dung ; the cultivation of green crops to feed this increased number of animals ; and the rotation of these green crops with the cereals. But the starting point of all is the feeding the larger number of animals ; this may indeed be looked upon as the very basis upon which English agriculture has been raised to its present exalted position, being in all the known world second only to that of Flanders.

It would be very pleasant for me to follow with you the progressive course of this system, from its earliest dawn in the introduction of turnips by Jethro Tull, in 1730, and the strong advocacy their cultivation met from Lord Townsend ; noting the various impulses it received from time to time, though still confined almost entirely to the county of Norfolk, till Mr. Coke, by his famous Holkham sheep shearings, as they were called, and Arthur Young, by his writings and tours, spread it over the whole country, and so gave agriculture an impulse which, favored by the formation of the Royal Agricultural Society, the advance in agricultural chemistry, the increased facilities of steam communication, and the invention of the draining tile machine, has been steadily increasing up to the present time. But our time would not permit, nor is it necessary to my argument ; I will, therefore, only invite your attention to some of its details, feeling confident we can adopt them in many points, if not in all.

And first, with regard to the manure. It might, by many, be supposed that we had now arrived at such a state of scientific knowledge, that it would be easy, from our long catalogue of artificial manures, to supply to any soil precisely those ingredients which it required, and thus be made independent of the old fashioned dung and all its attendant labor. But though this may be accomplished to a certain extent, we are still very far from being thoroughly acquainted with the nature of chemical affinities, especially when brought into action by so subtle an agent as the vital power, either of plants or animals. We find, for instance, in the ashes of plants, certain quantities of phosphates, sulphates, and the like, but we do not know how much of the

peculiar nature of these combinations is due to the agency of the heat to which the plants are subjected in the process of analysis, and consequently cannot say whether the elements of which they are composed were combined in the same manner, while in the living plant, or existed in some totally different state ; hence, it is impossible to judge certainly, from the known composition of the ashes of any plant, that this or that mineral manure would suit it. All that science has done, and all she can do, till much further advanced, is to point out the manures most likely to be beneficial, and leave it to experience to decide the truth or value of its suggestions ; for though the benefit conferred in this way is almost incalculable, practical experience has shown that no one of the artificial manures, and possibly no combination of them, can supply the place of good farm-yard dung. And this is a conclusion to which chemistry itself would lead us, since it shows that its ingredients are more varied than those of any of our compounds, and that these ingredients are probably more nearly in the condition required by the growing plant than we could make them by any process of art with which we are as yet acquainted.

Indeed, English farmers have become so fully convinced of the superiority of farm-yard dung, that the greatest care is now everywhere taken to preserve their pens and heaps from the wasting effects of the weather, the expense incurred in some places for this purpose being enormous. One of the principal modes of effecting this preservation is the construction of large tanks, into which the liquid portions are conducted by drains from all the stalls and the open lot ; this liquid being, at the proper time, either pumped up over the dung after it has been heaped, or carried directly to the field, by means of pipes and force pumps, or in water carts. Another, and I think a preferable mode, is to shut up the older cattle in stalls or boxes, as they are called, or to cover over the whole yard in which they are fed ; by either of which means the dung is quite protected from the rain, and is so well trampled that little or nothing is lost by fermentation. Of the advantage derived from this we shall speak hereafter.

The excellence of farm-yard dung having been established, there was, very naturally, a desire to increase its quantity as well as preserve its quality, and this led to the adoption of what I have said was the very basis of agricultural improvement in England, viz : the feeding a larger number of cattle. This was done with turnips and other green crops, the cultivation of which gave rise to the new system of rotation, called to this day the " Norfolk four

course." In describing the operations under this system, and the results effected by it, I shall confine myself to the estate of Mr. Coke, afterwards Earl of Leicester, as he may well be considered the chief agent in the revolution it produced through the whole country.

But before I go further I would impress upon you the fact that a mere rotation of crops, without regard to their nature, cannot improve land. The generally prevalent opinion on the subject is, that certain plants require certain ingredients, and other plants others, and that all that is necessary to maintain the fertility of any soil is, to have in succession a number of plants requiring these different ingredients. Whence it is inferred that a system of rotation could not be profitably adopted, unless there is a sufficient demand for the various products to which it would give rise.—Part of this is certainly true, and should always be kept in mind, but we must remember, also, that every crop we take from the land removes one or more of its valuable ingredients, and that, no matter how we vary these crops, we are always diminishing the elements of its fertility, so that in the end, though a rotation of different kinds of crops may enable our soil to produce something for a longer time than if the same crop were always planted, it would sooner or later be exhausted; and this exhaustion would differ from that produced by one kind of crop, only in being more thorough, for by the various crops we remove not one or two only of the valuable ingredients, as would be done by the single one, but all the ingredients which each of these crops finds suited to itself. Those rotations alone are in themselves beneficial to the soil which contain crops intended to be returned to it directly as green manures, or ultimately in the shape of dung; all others requiring from time to time the purchase of greater or less quantities of manure.—But to return:

At the time Mr. Coke inherited the Leicester estate no wheat was cultivated there at all, and but little in any part of Norfolk, its light and sandy soil being considered fit only for the inferior grains—oats, rye and barley; and Mr. Coke graphically described the wretchedly exhausted condition of his own Holkam Park, by saying "he once found two rabbits quarrelling for one blade of grass." At that time the system generally followed was one of rotation it is true, but it was, with few exceptions, a rotation only of different kinds of grain, followed by a bare fallow, or rest, once in three or four years, and returning nothing to the soil but the dung from a few indifferent cows, and a small flock of sheep. Mr.

Coke at once adopted the four course system, and gave his tenants the most liberal inducements to do the same, by allowing them long leases, at liberal rates, and erecting on all his farms suitable accommodations for the rearing and feeding of stock.

The management under this new system was as follows: One fourth of the land was well manured with dung, and planted in turnips; these, with the straw from the grain crops, were fed to the stock; the dung from these was the next year applied to another fourth of the land, with its crop of turnips, which were used in the same manner; and so on, till, at the expiration of four years, the whole farm had been well manured and planted in turnips.—After the turnips were removed the land was sown, without additional manures, in barley; in the Spring, while this was still small, clover and other "grasses" were sown upon it; when the barley was cut, these grasses were left to grow, and were eventually either partially or entirely used as manure: that is, they were, according to circumstances, pastured or mown for hay, thus leaving only the roots and stubble on the land, or the whole plant was at once turned in as green manure. In both cases the soil was enriched by them, for the roots alone of clover are an excellent fertilizer, much more valuable than our composts, and the hay that was made from it was eventually returned, almost entirely, in the shape of dung. After the clover, wheat or some other grain was sown, and when this was removed, the course was recommenced by a good dressing of farmyard dung and a crop of turnips.

Thus, you will perceive, only one-half of the arable land was each year sown in grain, the other being appropriated to the production of cattle-feed; or green manures; and the only bought fertilizer used in the whole course was a greater or less quantity of oil cake, which was brought from Germany and applied as a top dressing to the wheat or rye. The dung of his turnip-fed cattle was the principal means upon which the Norfolk farmer at that time relied for enriching his soil; and even at the present day, when artificial manures are so common, and very large amounts annually expended for them on the most highly cultivated farms, they are merely adjuncts, the dung-heap being still considered a most valuable source of fertility. This is proved by the purchase, on most farms, of a greater or less quantity, and on some of an enormous quantity of those kinds of cattle-feed not produced in England, a part of which is for the express purpose of enriching the dung of the animals to which it is given.*

*Mr. Hudson's plan on the Castle acre farm which he rents from the Earl of Leicester, and where he cultivates

But in order to make this system more profitable to the farmer, as well as beneficial to his land, it was found necessary to improve the various breeds of cattle, those with large bones, heavy frames and of slow growth, such as were then found everywhere, being abandoned, and those which came early to maturity and were readily fattened, being made to supply their place. The advantage of this is evident; if cattle and sheep are to be, as Mr. Coke once said of the old Norfolk breeds, "nothing but dung-carts," it matters not very materially perhaps; but if they are to be sold and bring in money, or supply food, as well as make dung, they must do so more profitably if they grow fast and fatten readily, for an animal which can easily be made of good weight and quality, is certainly preferable to one which requires nearly if not quite double the time to arrive at the same point, for he will not bring a better price when sold, though he has consumed an additional amount of food, which could have been devoted to the raising of another of the improved sort. This I need scarcely say has been verified by practical experiment.

I have said that at the time of which we are speaking, the soil of Norfolk generally was considered too light and sandy to produce wheat. This was disproved, for the turnip culture soon rendered it sufficiently fertile for this as well as the inferior grains; and I may say, in passing, that it is especially on the light soils of England, similar to our own, that the greatest improvement has been effected by the modern system. That all soils, however, are better for the admixture of a certain quantity of clay has been long known, and, accordingly, on Mr. Coke's estate, it was from time to time very freely applied. But even this, I must impress upon you, was not done till some years after the turnip culture had been used with benefit; and that you may not attribute an undue importance to this claying, I must add that the stiff soils in the county had, under the old system, fallen to an almost equally low point of fertility as the sandy soils.

These, then, were the means of restoring the worn out lands adopted by Mr. Coke, and afterwards in England generally: 1st. An improvement in the

quality of the farm-yard dung; by protecting it from the wasting effects of the weather. 2d. An increase in the quantity of this dung; effected by the cultivation of green crops for cattle-feed. 3d. An improvement in the growing and fattening qualities of these cattle. And lastly, as an additional means of fertility, the use of oil cake and clay marl. And what were the results? In a short time wheat was grown with profit where its culture had never been tried, or had long been abandoned; and before the expiration of fifty years, (which brings us down to 1830, a time, be it remembered, when guano was unknown, and agricultural chemistry still dormant,) not only were large numbers of well fattened cattle annually sold in London, and the rents of the farms increased to six or eight times what they were when Mr. Coke took possession; but what was of most importance, the fertility of the soil was so improved that the land, which had been considered too poor to produce wheat at all, made readily as much as 28 or 30 bushels per acre.*

Nor must it be supposed that this is an exceptional case, due to some peculiarly favorable circumstances, for I could point out not only very many other instances of similar improvement, growing out of the adoption of this system, but I could show you on the other hand some (for there are still some of the old-time farmers even in England,) whose generally unprosperous condition and steadily deteriorating soil, prove the inefficiency of the old mode of farming without stock; nor would the distance between the striking examples of the two systems be greater in some instances than the width of a hedge-row. I will also state that in France, where the soil is naturally superior to that of England, but where they still adhere more or less close-

*These results were, as I have said, attained previous to the introduction of guano and the other fertilizers now so common, and the degree of improvement which was reached is certainly a high point for us to aim at; but Mr. Hudson's farm, already alluded to, may be cited not only in proof of the great advantage of increase of stock, but also of the benefits derived from the use of artificial manures in connection with dung. For though I have in my argument confined myself to the proof of what was done without the aid of these manures, I am by no means of the opinion that they should never be used, since I believe the *very highest* (and *perhaps* the most profitable) cultivation cannot be attained without them; but I am entirely opposed to relying upon them alone, both on account of the unfavorable results ensuing in our own country, where this has been done, and from the fact that many of the best English farmers, like Mr. Hudson, even when purchasing manure, prefer that a large part of it shall first pass through the dung pen; but to return: About the year 1822, when Mr. Hudson entered upon his farm, "the whole live stock consisted of 200 sheep and 40 cattle of the old Norfolk breed;" "the wheat and barley crops did not then exceed 22½ bushels an acre." "On these 1200 acres he at present (1857) maintains 10 dairy cows, 36 cart horses, a flock of 400 breeding ewes, and fattens and sells 250 shorthorns, Herefords, Devons or

1200 acres, may be cited in confirmation of this statement. I quote from the *London Quarterly Review*, Vol. 49, p. 234, American reprint: "The purchased food given to the cattle in the straw-yards and sheds, and to the sheep in the field, consisting of oil cake, meal and beans, cost £2,000 (\$10,000) a year. The *greater part of this oil cake is charged to manure which it enriches in quality and increases in quantity*; but the direct expenditure on artificial manures—guano, nitrate of soda, and superphosphate of lime—amount in addition to £1,000 (\$5,000) a year."

ly to their old customs, the yield of the land is not more than half of what it is in England, and the cattle of the whole country, though double in number, produce actually but four-fifths the quantity of meat for food.

—Such then being the system by which so much has been accomplished in England, and the means so simple and apparently so inadequate to produce the great results, it is important for us to examine them more closely and enquire to what extent we can adapt them to our circumstances. In doing this I trust you will bear in mind that I commenced by endeavoring to impress upon you the necessity of improving our soil, for I do not believe with some of my friends, that we want something to enable us to plant more to the hand, though, as I shall show, this will also be effected, but something to make each acre produce more than it now does, this being, I think, not only more satisfactory but actually more profitable.

And first, as to the modes of preserving farm-yard dung. Of these the most approved is, as I have said, to cover with a roof the lot in which it is made, so as to protect it from the rain. The further precaution is also taken to keep out the water which falls outside; and if the soil on which it is situated is so porous as to allow the urine and other fluids to soak into it, (for a great deal might be lost in this way as well as by being washed away) its surface is well covered with clay or other suitable material, and tramped or rammed so as to make it water-proof. With such a lot, dung-heaps are unnecessary, for all the cleaning from the stable may be thrown into it without fear of loss; but should it be desirable to keep this separate, all that is done is to prepare the bed for it like the surface of the lot, and pile the dung so high that the water which falls upon it will not be sufficient to drench it, but only enough to keep it properly moist.

These simple means are literally all that is requisite, and surely the only objection which can be made to our adopting them is the expense, let us therefore compare this with the advantages to be derived. Suppose we allow 100 square feet for each animal, which is more than is found necessary in England, even when kept in separate stalls and not allowed to move about, 25 head will require a shed fifty feet square, or 2,500 square feet covered over

in any shape best suited to circumstances. This shed would have to be built, the ground under it leveled and clayed, if necessary, and a small bank made around it; the expense of doing which and keeping it in repair could not be great, either in time or money.

But what, on the other hand, will be the advantages? In the first place, our cattle, instead of suffering severely from cold, would have sufficiently warm and comfortable shelter, which, besides the satisfaction it must afford every humane man, would enable their food to keep them in much better condition, for the more an animal is exposed to cold the more food he requires. And as great as would be the advantages in this respect, they would be far more so if estimated by the increased value of the dung. (By "*dung*" I mean always the droppings of the animals and the litter mixed with them.)

It is a general opinion among us that cow-pen manure, especially that made in Winter, is very little better than rotted trash—certainly far inferior to stable manure; and according to our experience this is indeed perfectly true. But there are two causes which produce this great difference—the inferiority of the food furnished to our cattle, and the manner in which their dung is treated. Of the first of these I need say but little, our own experience having shown us that dung made by cattle in Summer, when in good condition and well fed upon grass, is very much better than that made from the same animals in Winter, when poor and ill-fed, from which we might naturally infer, even if there were no facts to prove it, that if fed on richer food, such as is given to our mules, their dung would be richer still.

Let us examine, however, a little more closely the second cause, the mode in which the dung of the two animals is treated. Our mules are fed in a stable where generally only enough litter is thrown to keep them dry and clean; this is allowed to remain till a considerable quantity has accumulated, and is then carted directly to the field, or is piled out of doors so deep that little or no rain soaks through it—in a word, it is always more or less thoroughly protected. With our cow-lot manure, on the contrary, the case is quite different; a quantity of comparatively useless trash is strewn on the ground, to be trampled and rotted, and this is, from time to time, so increased that there is in the whole mass a much smaller proportion of the droppings of the animals than in stable dung, so that even supposing the droppings were equally rich in the two cases, the cow-lot manure would begin by being more diluted with trash. But besides this, it is spread over so large an area that it seldom if ever attains a

Scots, and 3000 Devon sheep. The crop of Swedes (*Rutabagas*) average from 25 to 30 tons per acre. His wheat had in 1855 averaged for the previous 5 years 48 bushels per acre, and the barley 56 bushels." We need no stronger proof of the double advantage of profit from stock and improvement of soil. The quotations are from the *London Quarterly*, l. e., and from Caird's *English Agriculture* in 1850-51.

depth of two feet; on this there falls, in the course of the year, an average of $3\frac{1}{2}$ feet of rain water, a quantity which, if it remained, would be almost twice as deep as the dung itself; but almost the whole of this passing through and dissolving the most valuable ingredients, soaks into the ground or runs out at the side, carrying with it, of course, in solution, the most valuable parts, and leaving behind only those which are insoluble and comparatively useless; so that there is indeed but small ground for wonder that our cow-dung is worth so little, when we reflect how thorough a washing it undergoes.

But that you may form a definite idea of the importance of taking better care of our cow-dung, and of the remuneration consequent upon a small outlay of labor, and even of capital if necessary, for that purpose, I will relate the experiments of Prof. Voeleker, Chemist of the Royal Agricultural Society of England, calling your attention to the fact that where these experiments were made there is an average not of three and a half but only two and a half feet of rain in the year. He took several cart loads of dung from one of the stalls or boxes, mixed them most thoroughly and analyzed a portion, that he might know at any time what changes had taken place. The mass was then divided into several equal parts, each of which was treated differently from the others, and after the expiration of some months analyzed again. The result of this experiment was, that that portion which was kept under shelter had lost scarcely anything, whereas that which was put out in the farm-yard and exposed to the rain as usual, had lost two-thirds of its most valuable ingredients, potash, ammonia, and phosphoric acid. And that this immense loss was due to the washing of the rain and not to evaporation, was proved by frequent examinations of the air immediately around those parts most likely to give off ammonia, the only one of the three ingredients I have mentioned which is at all volatile; and also by the analysis of liquid which flowed from one of the heaps. This liquid Prof. Voeleker considered, in some respects, more valuable even than the urine of the animals, for he found that 1,000 gallons of it contained, besides other important ingredients, six pounds of soluble phosphate of lime, forty pounds of potash, and about as much ammonia as is contained in 45 lbs. of Peruvian guano; worth in all, according to the market value of these ingredients alone, not less than \$4.70. Now $3\frac{1}{2}$ feet of water on our pen 50 feet square will give us 54,000 gallons, and supposing that only two-thirds of this passed through into the ground or out at the sides, we would have, by this calculation, an annual loss of \$169 worth of

manure from the 25 head, or about \$6.75 from each. But this valuation is low, if estimated in another way, and one which for several reasons I think more nearly correct. I find, for instance, that a well fed English ox will make in the course of the year, 38 cubic yards of dung, and that this is saleable at \$1.25 per cubic yard, or \$47.50 for the whole; thus, if two-thirds of the valuable ingredient of this, as Prof. Voeleker has proved to be true, are washed away by the rain, we shall have as the loss on each \$31.66, and on the 25 head the enormous sum of \$791.

That you may not suppose that these are merely the calculations of science, and that they would not bear the test of experience, let me call your attention to the result of a field experiment on the farm of Lord Kinnaird. In 1851 several acres were manured with dung from the boxes in which some oxen were being fattened, and at the same time several others immediately adjoining, and as much like them as could be found, were manured with dung taken from the uncovered lot in which there were also a number of fattening oxen, fed like those in the boxes. The quantity of manure per acre was the same in both instances, and the quality would likewise have been the same, but that one had been sheltered and the other exposed. The two parcels of ground were planted at the same time in Irish potatoes, and produced, the one with the covered dung 376 bushels per acre, the other only 244.—The next year these two patches were sown in wheat and treated exactly alike, each receiving a dressing of guano, and again the result was in favor of the covered dung, its produce being $54\frac{1}{2}$ bushels, and that of the uncovered only 42. Now, if we compare the whole amount of the crops produced on these two pieces of ground, we shall have in the first year 54, and in the second 30, together 84 per cent more from the one with the covered than from the other with the uncovered dung; or taking the value of the crops, potatoes at only fifty cents per bushel, and wheat at \$1.20, and we have in the two years, from each acre, with only a single dressing of covered dung, the large sum of \$76 over and above what it would have produced had the dung been exposed.

This may be considered the actual amount realized by the sheltering, and I need not say would more than cover the expense. But to form an estimate of the relative value of the two parcels of dung, we must only compare the *increase* produced by their application over and above what the land would have made without them, and not the whole produce of the land and manure, as I have just done.

If we suppose that the unprotected dung raised the production 50 per cent (and I would remind you that the smaller the value we ascribe to this, the greater will be the contrast in favor of the other) but suppose we place it as high as 50 per cent., we have, for the land alone, a little over 160 bushels of potatoes, and 28 bushels of wheat, leaving, as the increase produced by the uncovered dung, 80 bushels of potatoes and 14 of wheat; and for that by the covered 216 bushels of potatoes and $26\frac{1}{2}$ of wheat; that is nearly $2\frac{3}{4}$ times as many potatoes and almost twice as much wheat, which, at our previous valuation, gives in the two years about \$140, as the produce of the covered dung, and only \$40, or decidedly less than one-third as that of the uncovered: a result which shows that Prof. Voelcker's calculation, so far from being above, is rather below the truth; and one which warrants us, I think, in saying, without hesitation, that farm-yard dung, when protected, is worth at least three times as much as it would be if exposed to the weather, and that its greatly increased value would more than compensate us for the expense.

It might be objected, however, that our dung is not so good as that from which I have made these calculations, and therefore the remuneration to us would not be equal to that of the English farmer. This may be very true, and I would not pretend to persuade you that by covering over your lots you would save \$31 worth of manure on every ox, for the probabilities are that its whole value would not be quite so great, our oxen being neither so large nor so well fed; but take even the low estimate I first made, \$6.75 per head, or \$169 for the 25 head, and still the remuneration would be sufficient to warrant the expense, for, be it remembered, this sum would be saved not once but every year. And should any one object that this is still too high, I can only say, that if our cow-dung is worth anything—if it is worth the trouble of hauling in the trash and hauling it out again into the field it would, if properly sheltered, be worth at least three times as much as it now is without that shelter.

There being then no doubt, I think, either as to the possibility or the advantage of our adopting this part of the English system, let us consider its second feature. The feeding of our cattle to increase the quantity, and further improve the quality of our farm-yard dung. Of the benefit this would be to our lands I need say nothing, the facts I have already stated being enough to convince us that if they were treated with a sufficient quantity of such dung as the English farmer makes, their luxuriant crops would soon render even the virgin soils of the

West no longer an object of such earnest desire; therefore, all that is necessary for us to dwell upon is the *practicability* of feeding our cattle without undue loss of land and labor from our staple products.

This involves four points: the number of cattle to be fed; the crops to be planted for them, with their rotation; the disposition to be made of the cattle when fed; and the relative amount of labor required by the two systems—that which I propose, and that which we now follow.

I find in England the number of animals kept on a farm varies from one ox, or its equivalent, 18 or 19 sheep, to every 3 acres of cultivated land, down to one for every 10 or more acres, and though there are always some "pigs," they are comparatively few. From this I infer we all have a sufficiently large stock, at least to commence with; if in the course of time it should appear expedient to do so, the number may be increased, but at present all I think necessary, on this point, is to improve the breed of those we have and pay more attention to them.

As to the second point, the crops to be planted for them, and their rotation: these may vary much, and though the Norfolk four course would probably not suit us exactly, I would advise a rotation of some sort, and that like this, it have turnips for its basis. The following is one I would propose for trial, as it would perhaps suit our climate as well as any other. Plant Irish potatoes in January or February, say of the year 1859; these will be excellent feed for your cattle or hogs, besides furnishing something extra for your negroes. When these are finished, about the end of July, plant peas to be cured as fodder or turned in as manure. In October or November sow the land in barley, oats or rye; these may be used as you think best; the barley can be cut as green food (as I have done this Winter 5 times) and then left to head; the grain is an excellent substitute for corn, and is, within certain limits, produced more abundantly on the same land.* Of oats we all know the value when housed,

* I say "within certain limits," for barley can never, under any circumstances, be made to produce as much as corn, when most highly cultivated; we have seen in the journals a report of 241 bushels of corn having been made on a single acre in Pettis county, Missouri; Dr. Parker, of Columbia, has produced 200, and limited crops of 100 or even more bushels have not unfrequently been made—whereas, the largest yield of barley I have been able to find recorded is 80 bushels (Johnston's Agricultural chemistry). But though its *capacity* for production seems very far below that of corn, when they are both pushed to their utmost, I understand from a gentleman in Newberry District, that his ordinary lands produce more barley than corn per acre. How far this limit extends I am unable to say—but even supposing we could produce rather more corn, the smaller amount of labor requisite and

and the chief reason I believe for regarding its culture as unprofitable, is to be found in the fact that we look upon it as something which is to be a clear gain, costing nothing, and consequently we sow it on any sort of land. Of rye I need say nothing.—When this small-grain crop is removed, which will be in June, 1860, the land may be sown in turnips, which will be taken off by March, 1861, and may be followed by sugar-cane, corn, sweet potatoes, or any of our Summer crops, as may seem best; and these will be off in time to commence again with Irish potatoes in January, 1862. Thus, in three years, we shall have planted on the same land five crops, one of which, the peas after the potatoes, may be used as green manure, or, like all the others, may first serve as food for our animals and then be returned in the shape of dung.

(CONCLUDED IN OUR NEXT.)

For the Farmer and Planter.

GUANO A STIMULANT.

MR. EDITOR:—The large quantity of guano now used throughout the South, has awakened fears on the part of our agriculturists, as to its real value. On account of its stimulating properties, some place it, in its relation to plants, on a par with those stimulants which excite the nervous system of man, without adding anything substantial to his body. It is my opinion that the *nature* of a plant precludes the possibility of its being acted upon by any *such* stimulus; but in this case a little consideration will show us the inaptness of the comparison. If guano acts merely as a stimulant, no real, permanent benefit to the plant itself would result from its use. The contrary is universally observed to be true, and those who are opposed to it, contend that the *soil*, not the plant, is injured. If we call Chemistry to our aid, we will be led to the same point. We know nitrogen to be one of the essential constituents of all vegetables, from the first formation of a green leaf to the final maturity of the seed, and we find that guano supplies nitrogen in large quantities, just in the form in which it may be assimilated. It also supplies, in small quantities, nearly all the remaining elements of fertility.

But while we thus find the above comparison inappropriate, all must agree that guano is in reality a stimulant. If it were not it would be valueless as

the season (Winter) at which barley grows are two important considerations in its favor.

I would not recommend as a general rule, that it should be cut quite so often (5 times) as I did during the past Winter, since it has perhaps lessened the quantity of grain. My reason for doing it was to prevent the plants from being forced too rapidly by the unusually warm weather we have had, and so running the risk of being killed by a late frost.

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a manure; just in the same way is super-phosphate of lime a stimulant, and poudrette, and cotton seed, and marl. All of them increase the vitality of a plant, and thus create a desire, so to speak, for more food. If guano shows this effect in a greater degree than anything else, it is accounted for in the fact that it supplies more nitrogen, which, more than any other element not always present in abundance, enters into the *vital* parts of a plant. Now, if the plant has a *desire* for food, and also the *vital force* to seek it, the surrounding soil will be invaded to supply the elements not contained in the manure applied. As a matter of course, then, manuring year after year with guano, and nothing but guano, would have the effect of exhausting the soil of its soluble salts, since guano supplies nothing in abundance but nitrogen.

This fact I consider to be, not an objection to guano, but an objection to its improper use. Seeing the danger, nothing is more easy than to avoid it; we should apply guano always in connexion with something else—with cotton seed, with woods scrapings, or upon land which has lain out and contains vegetable and soluble mineral matter in abundance. Nearly all other manures lack nitrogen, and we can supply it in no cheaper way than by using guano.

If the use of this imported manure is to occasion negligence in making manures on the plantation, all truly desirous of agricultural progress would be opposed to its introduction. But I think the contrary effect will be produced. I have in my mind many who use guano largely, and who, since they have commenced its use, in *addition* to the stall and lot manure which they made before, now haul into their fields large quantities of surface mould, decayed leaves, &c., &c., the use of which before was very limited, because the effect was scarcely visible. That guano may do harm among unobserving and obtuse farmers I admit, but am not, therefore, ready to condemn it as a nuisance.

C.

Society Hill, June, 1859.

CURIOUS EXPERIMENT.—M. Groux, the man with the thoracic cavity which admits of an inspection of the internal mechanism, has had an electro-magnetic machine made, which, applied through the orifice, tinkles a bell with every pulsation of the heart. The machine was made by Mr. Farmer, of the Alarm Telegraph office. Recent experiments were made in connection with the exact and delicate apparatus in the Observatory at Cambridge.—The operating forces were divided, one portion taking their post at the Observatory, the other in Boston. The principal agent, Mr. Groux, himself being here, the heart's impulses were transmitted over the electric wires, and instantaneously recorded at the Observatory.—*Journal of Commerce*.

THE PHILOSOPHY OF TILLAGE.

In developing his philosophy of tillage, at page 236, Tull reaches the following conclusions:—"From all that has been said, these may be laid down as maxims, viz: that the same quality of tillage will produce the same quantity of food in the same land; and that the same quantity of food will maintain the same quantity of vegetables."

The first named maxim is unquestionably sound and true, provided the conditions of the earth tilled are alike in all respects when the cultivation takes place. But the same quantity of tillage, when the ground is too wet to plow, will not produce the same amount of plant food that would be obtained if the earth was dry enough to break up into fine, pulverized particles. Again, it is known that the longer a field is tilled without rest or manure, the more adhesive, compact, and dead the clay and other earthy particles become; so that any given quantity of cultivation produces a smaller quantity of plant food, and less friability and comminution of soil as the stirred earth approaches exhaustion, and demands renovation. On the other hand, the length of time which some fields, not flooded nor irrigated by a river or other stream, will remain fertile without manure, and by wise cultivation alone, is truly remarkable. Tull's long residence in France and Italy extended his observation of the results of cultivation alone in maintaining perennial fruitfulness. On the page above cited, he says: "A vineyard, if not tilled, will soon decay, even in rich ground, as may be seen in those in France, lying intermingled as our lands do, in common fields. Those lands of vines which, by reason of some law-suit depending about them, lie a year or two untilled, produce no grapes, send out no shoots hardly; the leaves look yellow, and seem dead, in comparison with those on each side of them, which, being tilled, are full of fruit, and send out a hundred times more wood, and their leaves are large and flourishing; and continue to do so for ages, if the plow or hoe do not neglect them."

The experience of every man of years and close observation in vine culture will corroborate the remarks of this acute student of nature. The earth thoroughly stirred by the implements of tillage, yields, by the chemical decomposition of its own compounds, potash, salts of lime, and other minerals required to form the wood and fruit of the vine. All the leaves and trimmings of the plants produced every year being added to the soil, to increase its mould, and the earthy elements which would form ashes in case these leaves and trimmings were burnt, its fertility in many vineyards needs no other fertilizers for centuries, if ever. What really is removed from the soil in fruit is fully restored from the atmosphere and the deep subsoil, in a way which every cultivator ought to understand. Very pertinently does Tull call attention to the fact, that no change of crop is needed in vine culture for ages, on the same ground. He says: "But what in the vineyards proves this thesis most fully is, that where they constantly till the low vines with the plow, which is almost the same with the hoe-plow, the stems are planted about four feet asunder, chequer-wise; so that they plow them *four ways*. When any of these plants happen to die, new ones are

immediately planted in their room, and exactly in the points or angles where the others have rotted; else, if planted out of these angles, they would stand in the way of the plow. These young vines, I say, in the very graves, as it were, of their predecessors, grow, thrive, and prosper well, the soil being thus constantly tilled. If a plum tree, or any other plant, had such tillage, it might as well succeed one of its own species, as these vines do."

The above remarks, made about 140 years ago, bring us fairly to the point: how does the tillage ever perpetuate fruitfulness without manure, for centuries in succession?

The supply of water and gases from the ever-moving atmosphere will not alone meet all the requirements of grape vines and their annual fruits; nor will any given amount of clay, sand and vegetable mould yield an ever-enduring, and therefore, an unlimited quantity of earthy salts, like potash, lime, &c.

In the first place, we would state the important fact, that all soil, in all situations, will *not* yield annual crops of grapes for removal, no more than annual crops of wheat to be sent to distant markets, without manure of some kind to replenish the soil. The loss of fertility results often less from the deficiency of bone earth, potash, soda, magnesia, chloride and sulphuric acid, in the soil stirred by the plow, than from the *imperviousness* of the subsoil, which prevents the ascent of water during the hot summer months about the roots of vines and other plants, to supply them with the earthy salts needed for their healthy growth. Subsoil plowing, double spading and trenching, so useful in vine culture, break the under crust, and operate at once to facilitate the ascent of plant food from below upward, and to augment the total capacity of the ground both above and below the roots of plants, to hold the fertilizing gases, whether from the atmosphere or decaying vegetation, and all aqueous and mineral aliment required to bring them to full maturity. Deep and thorough tillage enlarges the store-house of plant food, and gives vastly more pulverized earth in which the myriads of tender rootlets are able to develop themselves for the sustenance of a common parent.

Good culture renders the ground that was before compact, and much like a solid rock, as bibulous as growing plants themselves; so that a soil, recently so hard as to be nearly closed to all air and water, becomes, by deep and perfect tillage, capable of drawing from the earth below and the air above, into the very mouths of hungry yet stationary plants, every element demanded by nature to yield the industrious husbandman a satisfactory harvest. Nature loves the earnest and thoughtful cultivator who does his work in a masterly manner—crushing every lump of clay, and pulverizing the ground to bring out all its hidden wealth, as if it were filled with particles of fine gold.

Shallow plowing gives to the soil only a small capacity to hold water in rainy weather; and when this capacity is full and running over, as it has been during the rains of March and February just past, and still additional rains fall, sad indeed is the washing done to many a plowed field. The loose soil was like a bucket full of water which could hold

no more. Upon this more rain came in torrents, and started a flood where the ground was a little descending, which carried the light mould loam and deeper soil, as far as loosened by the plow, into the branch or river below. Horizontal plowing, and that of the deepest kind, is needed to prevent injuries of this character. In sowing small grains and grass seeds, we have found a roller of much service, not only to compress the earth to the seed, and enable it to take a firmer root, but to prevent surface water from collecting in rills, as it is too apt to do, where the plow or harrow was last used in cultivation. Too much pains to avoid the washing of tilled land can hardly be taken in the South. It is better to rest more surface, and do right all that is cultivated at all than to scratch over a larger area to the serious damage of every half tilled field. Put a fair portion of the plantation down to the best sort of grasses, for permanent pastures and meadows. These will save much labor in pulling fodder, will support mules, horses, cattle, sheep, goats and hogs, cheaper than can be done in any other way. Perfect tillage is an art which but few understand. It must be practiced every year, deeply and thoroughly, to bring the soil into the best physical and chemical condition. Subsoiling may injure one or more crops, while in the end it will deepen the rich earth full 100 per cent. A deep, rich soil can never be made in one or two years, from a thin and poor one; but time and skill will attain the great object sought.

From the Southern Field and Fireside.

BLOODY MURRAIN.

DR. D. LEE: You copied into your department of the first number of the *Southern Field and Fireside*, an article from the Selma (Ala.) *Sentinel*, stating the prevalence in that section of bloody murrain. You ask if some gentleman in the district where the fatal malady exists will send you a description of its most prominent symptoms. Presuming that any information upon the subject will be acceptable, and pending that you may receive from the infected quarter, I send you what knowledge I possess of the disease.

I cannot give you a description of murrain from observation, for I never saw a case of it; but I make a synopsis of that given by those who have.

In the July, August, and October numbers of the Albany (New York) *Cultivator*, of 1839, there are several letters from practical and experienced farmers in various sections of the country, treating of the subject, describing the disease, and suggesting *preventives*, but offering no *remedies*.

From Missouri, where the disease prevailed to a very great extent that year, Mr. A. H. F. Payne writes to the *Cultivator*, and gives it as his opinion that there is no positive, unfailing cure for it; but that it may be occasionally cured. He describes it as a "most painful, dreadful disease;" the suffering animal passing blood through the urine and bowels, or bleeding internally. But those that discharge suffer less than those that bleed internally—both types, however, being equally fatal. He further states that the spring and fall are the times at which it prevails most. The poorest or fattest are most liable to be attacked, though there are excep-

tions. That a fat cow or ox, or a poor one, to become very hungry, and then very full, is apt to take it; or a change of food from green to dry, or from dry to green, will often cause the disease. He gives no *remedy*, but recommends, as a *preventive*, regular feeding where stock is kept enclosed.

Judge Jonathan Warren, of Ashtabula county, Ohio, a very intelligent gentleman and practical farmer, in a letter to the late Judge Buel, then editor of the Albany *Cultivator*, says: "The bloody murrain is occasioned by an *extended and overflowing gall*, affecting the liver, and causing the leeches or bloodsuckers therein, and the flow of blood outward or inward—and death follows."

He further states that the disease prevails more in new countries than in old; and vastly more with cattle that run in the woods than those in enclosed pastures. And that old and young, fat and lean, the work ox and the milk cow, all take it. But he had none to die, which he afterwards examined, *but had extended galls*.

Judge Warren gives no *remedy*; but says he has used the following prescription as a *preventive* for eighteen or twenty years, during which time he had lost no cattle by murrain:

"Wood ashes, given in equal quantities of salt, at the usual time of salting the cattle."

He also argues that the gall is some time in accumulating, and that necessarily it must require some time to diminish; and a few messes of salt and ashes a year should not be depended upon, nor a cure expected when the liver is rotten.

Mr. Leander Sackett, of Monroe county, Michigan, in a letter to Judge Buel, gives it as his opinion that there is no remedy for this disease, when once taken, but gives the following as a preventive:

"Make a trough, and put it where your cattle can have daily access to it, and mix equal portions of slaked lime and salt, and keep it always there."

For thirty years he had followed this prescription, and lost but one cow by this disease; previously he lost from one to sixteen annually.

I have never seen but two *remedies* suggested for the cure of murrain. The first was a bountiful supply of tar, down the throat. The second, *two doses of a pound of sugar each, mixed with water*. The latter is said to have cured the disease in its last stage.

If, as Judge Warren remarked, the disease is occasioned by "an extended gall," doubtless some remedy might be found efficacious.

I will state that for nearly twenty years I have acted upon the suggestion of salting plentifully all my cattle, old and young; and I have never in that time lost a cow or ox from any disease. During the prevalence of the sore or black tongue, last summer, I had but one cow affected, and that but slightly. I washed her mouth with a strong decoction of tobacco, kept her a few days in a dry pasture, and she was well.

There seems to be a great reluctance generally on the part of planters to write for publication their experience in diseases of stock, or farming, but if they could be prevailed on to do so, doubtless much light would be thrown on this malady, and others.

Very respectfully, yours,

H. RAIFORD.

From the Southern Rural Gentleman.

RUST IN OATS—IMPORTANCE OF INVESTIGATING THE SUBJECT BY FARMERS THEMSELVES.

MR. EDITOR:—The destruction of the oat crop last year, excited but little inquiry as to the cause. This year the rust has again made its appearance and threatens great injury to the crop. The value of the oat crop is too great to be given up without an effort to save it from destruction. The oat, like every other plant, has fixed laws for its germination, its growth and its perfect development; and it will not become diseased without a violation of these laws. This may be done by *improper cultivation*, by a *defect in soil*, or by *atmospherical influence*. The rust has been produced by one of these causes, unless it has become a prey to some insect that has inflicted wounds upon the plant, until the parasitic fungus is generated, which robs the plant of its juices and causes it to decline and die. If the disease has been produced by an insect, the wound will be found at the root or on the stamina of the plant. Has any one carefully examined the roots or the stamina, to see if the disease has been produced by an insect, and if by an insect, of what kind it is? Sometimes the punctures of insects cannot be easily detected without the aid of a microscope, but most generally they can be detected by the practiced eye. The progress of the disease from South to North favors the idea that it may be the work of an insect brought into life and activity by the warm weather. We can hardly attribute it to improper cultivation, for it has been the same for years, and we had no rust before last year. Nor can it be attributed to the soil, for they are sown upon every variety of soil, and the disease prevails alike in every soil. If produced by atmospheric malaria, the disease will be more prevalent and violent at first, and may gradually wear itself out, until it will be only an occasional visitor. But it may remain so long, and be so injurious, as to prevent the cultivation of the crop. The disease certainly merits a close examination. If produced by an insect, with the aid of a good microscope, if not by the naked eye, it may be detected. If produced by an insect, what changes will the insect undergo? This is an interesting, and may be an important, inquiry for the naturalist and the farmer. The field of inquiry is so large, that we cannot expect scientific men, qualified to investigate the subject, to leave their own fields of labor to explore ours. We are to derive the advantage, and our planters and farmers must take the matter in hand for themselves. They are on the farm, and can daily examine the crop and detect the first appearance of disease, and perhaps discover the cause and its removal. We have in every county intelligent planters, who have abundant leisure to give the subject all the attention it requires. If they would give their attention to it, they would soon become deeply interested in their investigations, and throw great light upon the subject, not only of the oat crop but of every crop we plant.

To accomplish this, they need a good microscope, and a few standard works on the physiology of plants and on entomology. The daily use of the

microscope would soon enable them to detect the first appearance of disease, and a knowledge of the physiology of the plant and of entomology, (if produced by an insect,) would enable them to give us an intelligent description of the cause, nature and remedy for the disease. A good thermometer and barometer, to indicate the temperature and state of the atmosphere, would be a valuable acquisition to the studies of the naturalist in his investigations, showing the state and temperature of the atmosphere, when the plant is diseased and when healthy. Our Agricultural Societies should take the matter in hand, and appoint one or more intelligent gentlemen to make the necessary experiments in every county. A premium should be offered, (sufficient to cover the necessary expense of books and instruments,) for the best essays on the physiology, nature, diseases, and their remedy, of cotton, wheat, oats and corn. The man who can impart such light on the nature of any of these plants as to increase their production, would be a benefactor to his race, and deserve a niche in the temple of fame by the side of a Cincinnatus and our beloved Washington. One good lecture, attended with a series of microscopic exhibitions of the plants at different stages of growth, would do more to call attention to the subject, and to benefit the community, than all the premiums offered for the best acres of corn, cotton, wheat and oats.

From the American Stock Journal.

THE HOG AND ITS FOOD.

The propensity to acquire fat in many animals seems to have been implanted by nature, as a means of protecting them against certain vicissitudes to which they might be exposed. The hog fattens most rapidly in such a state of atmosphere as is most congenial to his comfort—not too hot, nor too cold. Hence, the months of September, October and November are the best for making pork. The more agreeable the weather the less is the amount of food required to supply the waste of life. It has been found by experiment that a field of red clover is the best and cheapest place to keep hogs in during the spring and summer months, where they can have a plenty of water, and the slop from the house, and the sour milk from the dairy. All sour feed contains more nitrogen than when fed in a sweet state. The first green herbage of the spring works off the impurities of the blood, cleanses the system, renovates the constitution, and enables the animal to accumulate a store of strength to carry it forward in its destined course. A small patch of oats or peas to turn into when the clover fails, is good. Some object to fattening hogs so early in the season, the Indian corn depended upon for the purpose, not being matured. Taking all things into consideration, it is better to feed corn before it is ripe, as in that state it possesses considerable sweetness, and most varieties are in milk by the first of September, the hogs will chew it, swallow the juice and eject the dry fibrous matter. At this season of the year swine can be fed on many articles not readily marketable, as imperfect fruit, vegetables, &c. When such articles are used, cooking them is generally economical. Pumpkins, squashes, potatoes and apples boiled or steamed, mixed with one-

eightth part in bulk with mill-feed or meal, whey, and milk left to sour, will fatten hogs fast. In this state they will eat it with avidity and derive more benefit from it than when fed in an unfermented state. Artie'es that are of a perishable nature should be used first, to prevent waste, as it is desirable to turn all the products of the farm to the best account. Another quite important advantage of early feeding is, the less trouble in cooking the food and keeping it in proper condition to feed out. The convenience of feeding is promoted, as there is no expense or trouble to guard against freezing.

The more you can mix the food the better, as they will thrive faster on mixed food than when fed separately. In feeding, no more should be given at a time than is "eaten up clean," and the feeding should be regular as to time. It is of the greatest importance to get the best varieties, those that are *well formed*, and have an *aptitude to take on fat readily, and consume the least food*. As to which is the best kind, there seems to be a great diversity of opinion, some preferring one kind and some another. The Suffolks come to maturity earliest, and probably are the most profitable to kill at from seven to ten months, but I prefer the Berkshires to any I have ever kept. A cross of the two make good feeders and the pork is excellent; they will usually weigh from 250 to 300 pounds at the age of eight to ten months. The better way is to have the pigs dropped about the first of April, and feed well until December, and butcher. From a variety of experiments I am satisfied that it is wrong to let a hog remain poor 12 months of its life, when it could be made as large in 9 months as it generally is at 15 months. And I conceive it a great error with our western farmers to feed their corn to hogs without grinding. If pigs are kept well for three months after being dropped, they cannot be stunted after that, even if the feed is cut short. It is now the opinion with our good practical farmers, that feeding apples to swine is profitable, and that there is no crop that pays better according to its cost, being fully equal to potatoes by measure, while the expense is not more than three or four cents per bushel. They are better to feed to stock hogs in a raw state than potatoes—indeed, from my own experience, I have found but little benefit in cooking apples for swine. It is desirable that hogs should be provided with a dry floor for eating and sleeping only, the whole pen completely sheltered from the atmosphere, to save any washing or waste of the manure. One other suggestion and I have done: every farmer should see that the *commonwealth of the piggery* is furnished with plenty of straw, potato-vines, leaves, sawdust and the like, with an occasional load of muck, and almost any quantity of weeds, pea and buckwheat straw, all of which will be converted into the most efficient supports of vegetable life. Hogs are the best composters known, as they delight in upturning any such articles as the farmer wishes to convert into manure for the coming year. O.

The Greeks had little or no notion of butter, and the early Romans used it only as a medicine—never as food; so that it is comparatively a modern article of diet.

SMALL FARMERS—A DEGENERATE AGE.

I have just read the *critique* of Mr. L. A. Hine, on Prof. Nash, in the *Cultivator* of Feb. 1st, and wish to file a bill of exceptions, for the sake of a little more light.

Mr. Hine says that the inference from the extract given from Prof. Nash is, "that a man is great in proportion to the number of jackasses he is able to purchase." Now how can such an inference be drawn from, "We *fear* there is a tendency in small farms to make small men; and we deprecate the idea that the farmer is to be a man to be looked down upon by men in other callings?" The Prof. does not recommend large farms, but he says that he is "not one of those who *indiscriminately* recommends small farms." The entire argument of the article of Mr. Hine being based upon the above inference, and the rational inference not being there, the whole argument falls.

In this country we have some of God's noblemen on small farms, and some of the earth's ornaments on large farms. The measure of a man's greatness, and his goodness, lies not commensurate with the breadth of his acres. The limit of 10,000 acres cannot confine the generous impulses of a good man; nor can the confines of ten acres either contract or expand his respectability. There is no necessity for a man of a thousand acres being enslaved by hard work and harrowing care, any more than there is for the one of fifty. I will admit that there are many, very many men, who own large farms, who are a clog to human improvement, and despots of their day; but on the other hand, there are as many with smaller farms no better. From all the facts existing, had Prof. Nash *indiscriminately* recommended small farms, I would have considered him a wild theorist, and the same if he had *indiscriminately* recommended large farms. I would have inferred that he supposed man a creature of circumstance, and that the circumstance is a certain quantity of land.

All that Mr. Hine claims that a man of a small farm can do for the education and comfort of his family, I claim that a man of a large farm can, if he will. Neither will do it unless the impulses of the *man* are right.

But what I more particularly take exceptions to in Mr. Hine's articles, is a reference to "this degenerate age." I like this "age," and can testify that it is the best one I ever lived in, and it is the best one I can read about. There is an old saw that, with harsh sound, always says, "this degenerate age." When was there a better, less degenerate age? Admitting a thousand imperfections in human society, yet, answer me, when was it better? When was the supremacy of intellect greater? When was the power of moral sentiment more forcible? Was it when brute force was omnipotent—when our children had their ideas pounded in with the birch at school? Was it when straight-jackets controlled the lunatic, instead of moral treatment? Was it when the rack and the thumb-screw prevailed? Was it when heretics were burned at the stake, or when witchcraft was punished with burning? Or was it when the sex was more enslaved by the superior physical strength of man? If there was ever

a less degenerate age than now, when was it, and what are its signs?

I know that those who contend for degeneracy, claim that the children of the land are all going to the d—— decline, both physical and moral. A false position again, and consequently the conclusions therefrom are false. There are bad boys, and girls, too, now-a-days; but when were there none? Through the long, long ages of the past, we have recorded instances of juvenile depravity, even away back to the time when forty and two bad children were torn to pieces for mocking the prophet.

The present age is supplied with good boys and girls, and they are the hope of the world. With generous hearts and virtuous impulses, the boys of this "*degenerate age*" will, when maturer, take up the work of human improvement that is going on to-day, and give it an onward move.

From the American Agriculturist.

TRY EXPERIMENTS.

We should consider it an important point gained if we could induce each of our readers, or a considerable number of them, to carefully conduct a single experiment in cultivation, during the present season, taking for a subject any plant or plants that may be most convenient. A small plot of ground, or even a pot of earth, may suffice for this purpose. The observation of the effects of a fertilizer, or of the growth of a plant under different circumstances, may assist in determining questions of the greatest possible interest to tillers of the soil. After all that has been said and written about the growth of plants, how little do we really know about the subject. Scarcely two writers are entirely agreed as to even the first principles concerned in vegetation. Though scientific knowledge may be necessary to draw correct conclusions from facts observed in vegetable growth, still, facts alone can give a sure foundation for scientific knowledge; and the very humblest mind can observe and collect facts.

To illustrate what may be done: Suppose you plant two seeds of the same variety, as nearly alike as you can select, in separate boxes, each containing the same kind and weight of soil. Cultivate and treat them exactly in the same manner. They will, no doubt, very nearly resemble each other, but they will also present marked points of difference. One will have longer stems, or more leaves, or greater abundance of flowers than the other. Why? Science at present cannot answer the question. She may conjecture, but until the careful experiments of perhaps hundreds of observers have been collated, there can be no certainty in the matter. So with many questions of very great importance, additional facts alone can lead to right conclusions and practice.

It is true that each year's cultivation of the soil is adding to our store of facts; but how many more might be obtained if each cultivator would devote a small portion of his leisure to the study of some one plant, with a view to find out by experiment all that could be known about it; or better still, perhaps, to be able to give a satisfactory answer to some one question concerning its habits or its needs.

But leaving out of the question the importance

of such experiments to the advancement of knowledge, there is an inexhaustible fund of rational enjoyment in experiments, especially such as we are now speaking of. Let a person watch the development of a single plant from day to day, with a view to ascertain facts, and each successive stage of its progress will afford new delight. The variety of subjects for investigation is almost endless. Probably the greatest interest would be taken in endeavoring to ascertain for yourself the truth in regard to some point as to which you have doubts. For example: it is stated that there is a considerable difference in the time of maturity of potatoes, raised from eyes taken from different parts of the same tuber. Can you tell about this? With a few potatoes, a rod of ground, and a few memoranda of the time of planting, blossoming and ripening, you can, in one or two seasons, gain much useful information. The value of different manures may be tested, new varieties of seed tried, new fruit originated by hybridizing—in short, the taste and circumstances of each individual will suggest topics for experiment sufficient to employ his leisure pleasantly and profitably. Try it.

CORN HOEING AND TOP DRESSING.

In reviewing the mode of cultivation practiced by those who have been most successful in growing the corn crop, and especially the statements of those who have taken the premiums for the largest crops, we almost invariably find that clean and level culture, and top dressing, were practiced. The corn was hoed at an early stage of its growth, after first going through it several times with the cultivator, so as to mellow the soil as much as possible; and then to each hill some stimulant was given, such as plaster, ashes, (leached or unleached,) or a mixture of the two. In a few weeks the cultivator and hoe were used again, and the stalks thinned to the requisite number: the use of the cultivator being continued until the corn effectually shades the land, and the growth of the grass thereby repressed.

Large crops of corn can only be grown on rich and well cultivated soils. The structure and size, and rapid growth of the plant show that it requires to be abundantly supplied with the food necessary to its development and perfection. It possesses the power of elaborating healthy aliment from coarser food than any other cultivated plant, and hence its great value as a cleansing and preparatory crop when such manures are used. It also draws largely on the atmosphere, and hence needs that its foliage be kept healthy and green and not discolored by the presence of stagnant water beneath the soil. To promote a healthy color, and thereby enable the plant the more readily to appropriate to itself all the food present in the soil, there is no agent so valuable as plaster.

Therefore, plow deep, manure freely, plant early, top dress with ashes and plaster, keep the soil mellow and flat, and allow no weeds or grass to grow, and your corn crop will repay all your care and attention.—*Southern Farmer.*

When humility is the corner-stone, piety is the top stone.

The Apiary.

"In the nice bee what sense so subtly true,
From poisonous herbs extracts the healing dew."

For the Farmer and Planter.

"THE PRICE OF HONEY, LIKE LIBERTY, IS ETERNAL VIGILANCE."

MR. EDITOR:—Some years ago your Pomological Editor was experimenting with sheet zinc floors, if I remember correctly, as he then seemed to think with some hope of success; but, alas! is the above conclusion the result of years of experience? Some one being asked, after serving out a term of imprisonment, how he liked the employment, remarked "that it was not hard *labor*, but altogether too *constant* for his notions of a pleasant life." The above "eternal vigilance" sounds very much the same way. A friend once informed me that to have a number of extra pieces of plank, and to raise the hives about once a week, take out one piece and put another under, would answer the purpose. This may be a good way to get rid of the deposit from the bees in which the egg of the moth usually hatches; but it is of the same character, "constant" like winding an eight-day clock—*eternal vigilance*. If the bees would make honey, like clock-work, it might pay to give some attention for the enjoyment of this delectable sweet. Another friend says it answers a good purpose, to make the box or gum without any bottom—that is, put on a piece at a slope or angle of, or greater, than 45 degrees, merely leaving space for the bees to pass between that and the long side which projects some inches below to support the gum, which must also have a stay-brace at the top, or rest against a tree, or something prepared for the purpose. This *lower* side should be put on with guides, so that it could be slid up for examination, or convenience of putting in the hive. He has used them for two years with, as he considers, perfect success; but he is one of the eternal vigilance men.

Would it answer any useful purpose to construct the common hive with openings on one side in such way, that two or more false bottoms could be slid in, with holes at opposite sides, for the bees to pass? It would be comparatively dark between those divisions, and might have some tendency to deceive the moth. There is something about this matter which I don't understand, as I have seen some old hives open with the bees passing in and out sides and top full of honey, and free from the moth, while others, in apparently good condition, were destroyed.

Some are of opinion that for bees to prosper, only a few hives should be kept on the place. Examine every fall, kill and take the honey of all which have but a small supply—keeping only such as have a sufficient store for winter use. A good system of management may be the true secret of their success. Is the size of box a matter of any consequence? Is it advisable to construct them of greater capacity than would contain a bushel? Could we cultivate any herb or plant with a reasonable probability of increasing the yield of honey? Would the cultivation of buckwheat answer the same purpose in this climate which it does North? Is the Macartney rose of any service for bees? It blooms nearly the whole season, and they are frequently swarming about the flowers, but may not accomplish much by their labors. I write asking information, and any given will be thankfully received. I once had a pretty good stock of bees, as they increased for a time with but little difficulty—the scale turned and they all died out. I have commenced anew and hope to have some honey, even at the price—*eternal vigilance*.

SUAVIS.

[The editor was not at hand when the above was received, but we insert it, with the hope that he, or some other intelligent gentleman, will give "Suavis" the information he seeks.—PUBLISHER.]

From the Ohio Farmer.

PROFITS OF THE HONEY BEE.

Having long studied the most efficient means of increasing and saving our bees, of keeping out the moth, and of removing a share of the honey in frames, without disturbing its legitimate owners; and having succeeded beyond my expectations, in these necessary objects, I am anxious that others should be put in possession of my method, and its results; for no branch of rural economy yields so great a return of actual profit, and of rational amusement, as the cultivation of bees. How surprising, then, that so little is done towards its improvement. There is an unwillingness in many of our farmers, to step out of the track they have so long followed. They say bees now require too much trouble; if they could be kept as easily, and do as well in their old sycamore gum, or box hive, as they were wont in the early settling of the country, there would be some satisfaction in keeping them. Yet these very men, who look on bee-tending, the planting and cultivating of orchards and the care of poultry as hard and troublesome work, will toil all summer without a complaint, to raise a crop of corn, which will yield them a comparatively trifling remuneration. They acknowledge stock-raising to be the most profitable branch of Agriculture, and envy those who have the means of going into it. Yet here is a stock for which they have unlimited right of pasturage, that they may turn out to range at will, without

danger of their being taken up as strays, or complained of as breachy, and which requires no exorbitant outlay of capital to commence the business, and certainly is sufficiently neglected to leave room for competition. There is more to be feared in the raising of Durhams and Suffolks. In short, nothing is wanting but pasture, good hives, cleanliness and attention, to insure a rich reward to those who engage in the pursuit.

I will relate an anecdote of a good old bishop. In paying his annual visit to his clergy, he was very much afflicted by the representations they made of their extreme poverty, and which the appearances of their houses and families corroborated. Whilst he was deploring the state of things which had reduced them to this sad condition, he arrived at the house of a curate, who, living among a poorer set of parishioners than any he had yet visited, would, he feared, be in a still more woeful plight than the others. Contrary, however, to his expectations, he found appearances very much improved. Everything about the house wore the aspect of comfort and plenty. The good bishop was amazed. "How is this, my friend?" said he, "you are the first man that I have met, with a cheerful face, and a plentiful board. Have you any income independent of your cure?" "Yes, sir," said the clergyman, "I have; my family would starve on the pittance I received from the poor people I instruct. Come with me into the garden, and I will show you the stock that yields me an excellent interest." On going to the garden, he showed the bishop a range of bee-hives. "There is the bank from which I draw an annual dividend; and it never stops payment." Ever after that memorable visit, when any of his clergymen complained to the bishop of poverty, he would say to them, "Keep bees! keep bees!" and I shall bid my readers adieu, with the same advice.

EDWARD TOWNLEY.

A CRACK IN THE HOG TROUGH.

Some time ago a friend sent me word that he gave every day nearly twenty pails of buttermilk to a lot of shoats, and they scarcely improved a bit on it. Thinks I, this is a breed of hogs worth seeing—they must be of the sheet-iron kind; so I called on him, heard him repeat the mournful tale, and then visited the sty. In order to get a closer view of the miraculous swine, I went into the pen, and on close examination found a crack in the trough, through which much of the contents ran away under the floor.

Thinks I, here is the type of much of the failures and misfortunes of our agricultural brethren. When I see a farmer omitting all improvements because of a little cost, selling all his good farm stock to buy bank, or railroad or mortgage stock, robbing himself and heirs, thinks I, my friend, you have a crack in your hog-trough.

When I see a farmer subscribing for half a dozen political and miscellaneous papers, and spending all his leisure reading them, while he don't read a single agricultural or horticultural journal—thinks I to myself, poor man, you have got a large and wide crack in your hog-trough.

When I see a farmer attending all the political

conventions, and coming down liberally with the dust on all caucus occasions, knowing every man in town who votes his ticket; and yet, to save his neck, couldn't tell who is President of the County Agricultural Society, or where the Fair was held last year, I "unanimously" come to the conclusion that the poor soul has got a crack in his hog-trough.

When I see a farmer buying guano, but wasting ashes and hen manure, trying all sorts of experiments except intellectual hard work and economy; getting the choicest seeds, regardless to cultivation and good sense; growing the variety of fruit called "Sour Tart Seedling," and sweetening it with sugar, pound for pound, keeping the front fields rich and neat, while the back lots are overgrown with elder, briars, snapdragon and thistle, contributing liberally to the Choctaw Indian Fund, and never giving a cent to any Agricultural Society—such a man, I will give a written guarantee, has got a crack both in his head and in his hog-trough.

When I see a farmer spending his time traveling and visiting in a carriage, when he has to sell his corn to pay the hired help, and his hogs are so lean that they have to lean against the fence to sustain themselves while squealing, I rather lean to the conclusion that somebody that stays at home will have a lien on the farm, and some time the bottom will come entirely out of the hog-trough.—*Orange County Farmer.*

THE GARDEN.

The Garden is a bound volume of agricultural life, written in poetry. In it the farmer and his family act the great industries of the plow, spade and hoe in rhyme. Every flower or fruit-bearing tree is a green syllable after the graceful type and curse of Eden. Every bed of flowers is an acrostic to nature, written in the illustrated capitals of her own alphabet. Every bed of beets, celery, or savory roots or bulbs is a page of blank verse, full of belles lettres of agriculture. The farmer may be seen in his garden. It contains the synopsis of the character in letters that may be read across the road. The barometer hung by his door, will indicate certain facts about the weather, but the garden, lying on the sunny side of the house, marks with greater precision the degree of mind and heart culture which he has reached. It will embody and reflect his tastes, the bent and bias of his perceptions of grace and beauty. In it he holds up the mirror of his inner life to all who pass; and with an observing eye, they may see all the features of an intellectual being in it. In that choice rood of earth he records his progress in mental cultivation and professional experience. In it he marks by some intelligent sign, his scientific and successful economies in the cornfield. In it you may see the germs of his reading, and can almost tell the number and nature of his books.

In it he will produce the seed-thought he has culled from the printed pages of his library. In it he will post an answer to the question whether he has any taste for reading at all. Many a nominal farmer's house has been passed by the book agent without a call, because he saw a blunt gruff negative to the question in the garden or yard.—*Elihu Burritt.*

The Farmer and Planter.

COLUMBIA, S. C., AUGUST, 1859.

BLOODY MURRAIN.

We direct the attention of our readers to a communication on this subject, clipped from the *Field and Fireside*, not so much for any merit the article contains as for the importance of the old adage, "an ounce of preventive is worth more than a pound of cure," and the ignorance that may exist about a disease which everybody talks about, everybody dreads, but nobody knows how to describe or how to treat.

We have never found anybody yet who could give us a sensible "diagnosis" of bloody murrain.

What is bloody murrain? "Why it is—well—ahem—it is, ah! bloody murrain." That is about as near the mark as you generally get.

A very wise old cattle-doctor in our neighborhood, has an infallible cure. He calls it "bursting of the gall bladder," and says, "if you will drench the animal when first taken, with a barrow's gall—it will effect a certain cure." He bottles the gall of all his barrows, at hog killing, and keeps them for the purpose. Why there should be any especial virtue in a barrow's gall, we are not prepared to say—*Quien sabe?*

RUST IN OATS.

Our readers will find a very interesting article in our present issue, on this subject, from the *Southern Rural Gentleman*, a delightful companion, by the way, of Grenada, Miss.

The oat crop throughout the whole country, has again been a failure, owing to this rust or blight, which made its first appearance a year since.

It is well worth the investigation; there is no crop more important to the cotton planter than the oat.—It is a nutritious food for horses, and comes in at a season when the corn crib is generally not very well filled. Whether the rust be the work of an insect or of the season, we are not prepared to say, but it is a fact worth noting that the Egyptian oat sown in the Fall, has escaped, and the same oat sown in the Spring has been less injured by the rust than any other variety known to us; and we attribute it to the fact, that it matures earlier than any other variety, sow it when you will. We think the same laws govern rust in oats as in wheat. Every farmer knows the uncertainty of late wheat. During our experience, a half dozen varieties of wheat have, for a season or so, been the rage, until rust would make them unpopular.

We would like to hear something from our farmers, on this subject, throughout the country.

NEW SERIES, VOL. I.—31

GUANO AGAIN.

The guano fever has prevailed so extensively on our Southern plantations, during the present season, that we feel it to be our duty to keep our readers fully posted up upon the subject.

We invite their attention to a very sensible letter from a Georgia Planter, which we clip from that capital weekly "*The Southern Field and Fireside*."

This guano question cannot be too closely studied—if it will produce the grand results claimed for it by some gentlemen. If it will enable the cotton-grower to double his production upon old worn out fields, without an increase of labor in their cultivation; if it will not exhaust land by stimulating it to yield up all its wealth for the production of crops, but make our soils annually better, why, we have found the philosopher's stone, and the way is plain as the nose on a man's face. But if these things are not so—if it will pay on some soils and not on others, if it will pay in some seasons and not in others, if it will pay in some crops and not in others, it is all important that the people should know the failures as well as the successes of experimenters. To our mind the question is not *whether* we shall use guano, but *how* we shall use it. Shall we use it as a means to rob our soil of all its wealth, or as a means to enable us to rest, to ameliorate, by making more on a smaller area, and to make more manure by other processes?

"BELL RINGING."

"If the bell have any sides, the clapper will find 'em."
Benj. Johnson.

We have to acknowledge the receipt of a printed circular from "VICTOR B. BELL, P. O. box 2537, Chicago, Illinois," addressed to the friends of agriculture throughout the Union, begging them to make an organized and systematic effort to secure the establishment, by Congress, of a NATIONAL AGRICULTURAL AND STATISTICAL BUREAU.

We are requested to "regard this as a personal appeal to us, to use our influence in procuring the adoption, by the Legislature of our particular State, at its next session, of the proper resolutions of instruction, and their transmission to the United States Senators and Representatives, respectively."

"By these simple but efficient means," the writer goes on to say, "this simultaneous movement will have imparted to it a weight, dignity and power, which cannot fail to secure the necessary legislative instructions; and the matter will thus ultimately come before Congress under such auspices as shall enforce its favorable action in the premises." And he might have gone on to say, and created a new batch of offices of various capacities and varieties, to be filled by greedy loafers who are out of employment,

but may be made very useful and available in getting in and out this and that party, as the interests of parties require; and furthermore, of depleting the treasury and maintaining the necessity of high tariffs and party organizations, to build up the North at the expense of the South, &c.

We have very little faith in memorials—everybody knows how easy it is to get signers to any kind of paper not *bankable*. We could get any number of signers to a certificate of good character for the Devil or Dr. Hines, if necessary.

But the question is, does the agricultural portion of our country need any assistance which Congress can give them, save to be “let alone?” And if we have wants we would like to have them provided for by those who can appreciate them. When an Agricultural Department of the Government becomes necessary, all this clap-trap plan will not be required to secure it. When the *agricultural* population is represented in Congress by *agriculturists* proper—by men of standing, of property, of good common sense, and common honesty, it will be time enough to move in this matter—but as long as Congress, in the proportion of three to one, consists of the loafers, hangers-on, stump-orators, and puppets of party, we are inclined to think the safer policy for the *agriculturists* will be, to make the same reply that the merchants did to the French Chambers, when asked what they should do to assist them.

“*Laissez nous faire.*”—Let us alone.

“SPARE THE BIRDS.”

The frequency with which this caution has appeared of late, as the caption of newspaper paragraphs, we would be glad to think an evidence of a reign of toleration, towards an interesting part of the animal creation, which are surely “more sinned against than sinning.” Every now and then an epidemic sweeps over the country, which is particularly infectious among village loafers, school-boys, (i. e. if there be any *boys* now-a-days,) and country *run-about*s—a pointer dog and a double barrel gun. Every fellow, from the richest nabob’s son in the neighborhood down to him who is “good for nothing,” must have a spotted “pincter” with a collar on, trotting after him, and a double barreled gun, with its accoutrements, swung around his neck.—Thus equipped he sallies forth, and wo betide the feathered biped that comes within the range of his relentless fowling piece. It is pop, bang, at everything, from a partridge down to a sparrow. Everything is *game* to this amateur bird fancier, and nothing exceeds his own prowess but the feats of his “pincter,” who has set and flushed everything in the field, from a sheep to a snow-bird. But, thanks to the old proverb, “every dog has his day”—after

a while the “pincter” takes the mange, or takes to sheep-killing, and dies a natural death—and the birds frightened to the woods, poor things, by this perpetual bang, bang, are now too hard to find, and the amateur sportsman hangs up his double barrel for a season.

The depredations of insects are annually becoming a matter of more serious importance to the agriculturist, the pomologist, and horticulturist. We hear the farmer loudly complaining against the weevil, the wire worm, and the bud worm—the lover of fruit growls against curculios, caterpillars, egerias, and the like—the lover of flowers frets over the depredation of the rose chafers, while the gardener protests that between bugs and worms and flies, he can make nothing flourish under his care. Have the birds, or rather the killing of the birds, nothing to do with it? What have become of all the woodpeckers? of all the martins that used to visit us in such armies and amuse our boyhood by their evening marchings and counter-marchings, their echellons and sweeping charges in the air? where are the swallows that were wont to build their nests in the old chimneys of home, and at nightfall amuse us by their curvings and sweepings after the insects on the wing? where are all the robins who used to make us happy by their cheerful chirp, and to make us laugh when he would tumble from the china tree, as we thought drunk, from too many berries? where are the king birds and sparrows, and the lovely little wren, who was wont to build his wee nest in some cozy nook, under the house eave? where are all the blue birds and the black birds, the thrushes, and that most glorious of all our natives to the manor born, the mocking bird, gone? Why, the very crows have become scarce, under the influence of strychnine and buckeye.

We protest against this bird murder. These beautiful creatures all have their uses—they are oftener our friends than our foes, and should be petted and encouraged to nestle about our homestead. At the moment, while we were penning the above lines, a cat bird, (a bird we always hated for his cattish imitations, and his love of fruit,) has half-way converted us, by an indefatigable foray he has been making on some insects upon a grape vine by our window—not one of which had caught our eye before his cat-birdship drew our attention to them. Shall we be worse than the Brahmins? In India they protect by law the Brahmin kite and the adjutant. In Barbary they cherish and protect the stork, because “On the houses they choose for their nests, no evil cometh.”

CUSTARD PUDDING.—Two spoonfuls of flour, six eggs, one pint of cream, a little sugar, one nutmeg. Boil half an hour.

PHILOSOPHY OF TILLAGE.

Our readers will find, in our present issue, a very sensible article, from the pen of Dr. LEE, clipped from the *Southern Cultivator*.

It is a little remarkable, however, that amidst all the improvements of the age, all the talk and bother about progress, march of science, and the like, that we find ourselves, every now and then, drifting back upon truths enunciated by that good old common sense JETHRO TULL, who, the dictionaries say, was "the first writer, perhaps, ancient or modern, who ever successfully attempted to reduce Agriculture to certain and uniform principles."

Is there nothing new under the sun? What are we to believe? In whom are we to put our trust? Is there any wonder that simple-minded folk become obfuscated by the wisdom of this multitude of counsellors now enlightening the world?

One man tells us, with all the earnestness of a believer, that guano is all we want—it is the philosopher's stone. Put down the good Peruvian, and there is no mistake—cotton bales will come. Another swears, like uncle Toby said "our army in Flanders" did, that guano *won't* do, it is evanescent; you must use the improved super-phosphate of lime; it will work wonders, and your land will grow better and better the more it feeds upon it; it is the only thing that *will pay*, in the long run. Another talks to you as positively about his manipulated compounds—his Kettlewell salts—cites you to the chemist's analysis, and shows you that here is just exactly what you want. He has not finished his story before a new advocate for the Elide Island Guano shows you, here is all things in one, sir: your ammonia, your phosphate of lime, your potash, salts, sulphate of lime, and your water. But, says another, none of these are equal to Nevassa—read Liebig on the subject. So, between poudrettes, excelsiors, ground bone-dust, improved animal fertilizers, De Burg's ammoniated, Kimberly's cereal fertilizer, phosphate fertilizers, Nitrogenized super phosphates, progression of primaries, and proximates of ultimates, the seeker after plain truth shuts his eyes in despair, and cries out, humbug! Is it a wonder that he does? To-day he is told that the time is not far distant when the farmer may carry in his breeches pocket concentrated manure enough to answer for two wagon loads of the stuff he now uses. He is told that he can, by steeping his seeds a few hours, double his product. To-morrow he is told it is all humbug, and that "elbow grease" and horse power are the only things in the world that will do the business for him. We are told, "in the multitude of counsellors there is wisdom;" there may be, but we want common sense. To our mind a good deal depends upon the stand-point occupied by the experimenters.

It may suit a market gardener, or one who cultivates land worth \$100 to \$300 per acre, to indulge in fancy manures, under-drainings, sub-soiling, and fancy implements. It will not pay here. We must go back to old Jethro Tull: do better work, plough deeper, take care of what we have, keep the salts of our soil from being leached out by the winter rains, keep its surface covered with a green carpet, to protect it from the summer's sun, and use all the means in our power to rob the dews, rains, and the atmosphere, of those fertilizing properties which a kind Providence has stored in them for our use.

There is no crop which robs the soil of so little of its *real fertility* as our great staple, cotton. Keep the soil from washing away, and return the seed and stalk, and with good cultivation, a soil to it, and it may be made to yield good crops as long as old Jethro Tull's vineyard in Italy.

HOME MANUFACTURES.

We are pleased to learn that our enterprising townsman, Mr. WM. GLAZE, is making all the necessary arrangements for manufacturing agricultural implements at the Palmetto Foundry.

It is a step in the right direction, one which cannot fail to prove profitable to the manufacturer, and of inestimable benefit to the agriculturist.

The question is no longer a debateable one. We must improve our old plantations, or move to that great El Dorado, the South-west.

We cannot afford to keep up a plantation which requires an annual investment in manures, at from \$5 to \$10 per acre, and the labor of a negro fellow worth \$1,500, to produce four bales cotton, when the same investment in the lands of the South-west would yield ten bales of cotton, with less labor. So long as good cotton lands are attainable in the South-west, at reasonable prices, so long will the tide of the cotton making population set in that direction.

Those who are bound to home by stronger ties than gold—those who have enough, and feel that it is better to enjoy comfort and a competency than to risk the chances of floods and fevers, will remain, and it is those alone whom we expect to reach by any appeals as to reform and improvement. When the value of land and labor at the North rose to a point, when the farmer found out he could not afford to cultivate the soil, he was not slow to find out a remedy. He set his ingenuity to work to improve his tools, so that one hand could do the work of two. Harrows, cultivators, horse-hoes, and gang-plows, were brought into use. When he found out that he could not afford to hire his wheat harvested, he invented a patent harvester that swept down his field in a few hours.

Very little ingenuity has been so directed at the South—we have not felt the necessity of it—every-

body here only think of moving West, when they wear out their plantation. And the only efforts made at improvement having been in the wrong direction, based upon *northern* notions, could not reasonably succeed. We want very different plows to those used by them—something adapted to the character of our own soil and staple—and what is equally important, adapted to the capacity of the negro. We want tools simple and durable, tools not easily thrown out of order, and easily mended and set to work. The plows which have been generally exhibited at our State Fairs are blunders. We have seen no “two-horse plow” which could do good work, with less than four-horse power attached to it, on a worn out tenacious soil.

The subsoil plows have been mostly clumsy contrivances for horse killing, while all the sweeps and scrapers were little better than mere make-shifts.

In Mississippi and Alabama, the attention of ingenious mechanics and practical planters has of late been turned to this matter, and several very important steps have been taken in the right direction.—But these improvements cannot be made in a day.—We may expect failure upon failure, yet that is no reason why we should not begin, or not succeed.

That veteran in the cause of agricultural reform, Dr. PHILLIPS, of Mississippi, who has been all his life on a plow hunt, thinks he has, in the famous Brimley plow of Kentucky, found what the planter really required. With a commendable spirit (which we would like to see imitated nearer home,) he has enlisted home capital and home enterprise in the business, and they have now, in Jackson, Mississippi, a large Plow Factory, under the management of Mr. BRIMLEY.

We noticed the other day in one of our exchanges, a very interesting statement of the trial of the Brimley and other plows, made by some gentleman in Mississippi. Let us compare the work done by them with the work done by the plows exhibited at our State Fair, at the annual exhibition in 1858. Too little attention is generally paid to this matter—but we always have so many irons in the fire!

	Depth of furrow in inches.	Width of furrow in inches.	Section in square inches.	Draft in inches.	Qualities of Work.
Brimley No. 2, A.	6½	9	58½	336	Perfect.
“ No. B.	9	10	90	350	Second best.
Calhoun No. 2.	6	9	54	448	Not good.
Hall & Spear No. 2.	7	7½	52½	623	Infamous.
South Carolina Fair					
Boyden & Son	9½	16		650	
E. H. Bloodworth	8	21		800	
E. E. Smith	7½	19		600	
G. W. Cooper	7½	18½		750	
“ “	7½	13½		1300	
Subsoil Plows					
Bloodworth	6½			900	
G. W. Cooper	8½			1000	

It is difficult to come to any distinct conclusion as to the merits of these plows, from the above experiments, as much depends upon the character of the soil, and the manner in which the experiment was conducted. We know the Boyden plow is too much for any two horses, on stiff land, although it does beautiful work.

The Smith plow is a home-made implement, and, to our mind, did the best work, all things considered, in the crowd. The Dynamometer speaks loudly in its favor.

We would suggest to Mr. GLAZE to look well over the ground before he goes deep into the business.—One false step may cost him a good deal of trouble.

DISEASES OF DOMESTIC ANIMALS.

No better evidence could be given of the importance of this subject to the agriculturist than the manner in which Dr. BROYLES' Essay, read before our State Society, has been generally received, where agricultural science is appreciated.

It has been republished in several of the ablest Northern agricultural journals, extracted from largely, and deservedly lauded. And we might go on to say, that no better evidence could be offered, of the apathy of our own people, to receive knowledge on this important branch of domestic economy, and their indifference to appreciate their own writers, than the manner in which it has been received at the South. It has not been extracted from, or republished by a single Southern agricultural journal—it has not been alluded to, that we are aware of, and very little notice has been taken of it, even by the non-agricultural press. What inducement has a writer to labor in a good cause, when he meets with such appreciation as this at home? If our journals prefer to fill their columns with Northern notions, with political humbugging, with sensation stories, murders, hair-breadth 'scapes and disasters, instead of wholesome information, how can we expect, what right have we to look for improvement? It is the taste of the people—it requires such stuff, says the journalist. Ah, indeed, it is your mission, then, to pamper the vulgar tastes of your readers, by feeding them only on the vices and enormities of society—not to reform or to educate?

But it is not our purpose to moralize, but to endeavor to draw the attention of the readers of the *Farmer and Planter* to a very important branch of domestic husbandry, and to elicit new views and opinions on it.

DISEASES OF CATTLE.

We differ from Dr. B. in his opinion that cattle are less liable to disease than the horse. They are of less value, and, consequently, less attention has been directed to them; but we have been more at fault in understanding and treating the diseases of

cattle, than any other domestic animal. Particularly since the introduction of the improved breeds, have we found many new ailments baffling our skill.

Murrain.—What is murrain? We have never heard that question satisfactorily answered. Or, what is distemper? Very vague notions prevail among the people on the subject. We have heard the mountaineer declare, that he would feel justifiable in shooting down any cattle, which might be driven from a lower latitude (or a distempered country, as he termed it,) into his neighborhood.

The idea prevails in the mountains, that all animals, brought from a lower latitude, will die of and create distemper, and *vice versa* it is certainly the case; or rather, they are almost sure to die of some disease.

A neighbor of ours brought a herd from Tennessee, a year since, and during the first season all died, except the calves, yet they did not communicate the disease to the native cattle.

The most fatal cases of disease among our cattle, has been confined to those in the best condition.—We have had cows suddenly attacked in the Summer time, with violent pain, frothing at the mouth, convulsions, and death in a few hours. Upon *post mortem* examination, could find nothing amiss, unless it was a very *dry* condition of the “manifolds.” We have lost a great many yearlings and calves, when fat and running upon good pastures, which were attacked suddenly; first symptoms, dullness, indisposition to move, standing with legs wide apart, a hanging down look about the posterior part of the bowels, glaring look out of the eye, and a disposition often to show fight and stubbornness, with great constipation of the bowels. The animal dies in a few days. *Post mortem* examination—nothing amiss, except enlargement of the gall-bladder and large amount of undigested grass in the stomach.

We have never found any cathartic for a cow equal to a decoction of madder—say 1lb. for a cow. We have succeeded in some cures, when taken early, with madder. We do not believe the black tongue to be the same disease as murrain. We found no difficulty in curing it by swabbing the mouth two or three times with spts. turpentine and copperas.

Mad Itch.—More cattle die of, than most persons are aware of. We have seen the same results alluded to by Dr. B., the effect of cattle feeding upon the dry corn stalks which had been fed green to hogs.

Hollow Horn.—We cannot subscribe to the opinion that it is hollow stomach. We have seen the fattest cow in the herd grow dull, and fall away day by day, until relieved by boring. We have noticed an extract from Dr. DADD’s work ridiculing the practice of boring, and pronouncing it barbarous igno-

rance. We have seen it cure too many cows, to be driven from the practice by half a dozen Dr. DADD’s paper bullets.

Vermin.—We are inclined to think more cattle die from this pest than all other causes in our climate. It is exceedingly difficult to exterminate them. Running out as our cattle do, they are liable to be covered at any time, for one cow will infest a herd.—And let them once get a place on the farm, it is next to impossible to get rid of them. A cow cannot thrive with vermin on her, and is always more subject to other diseases as she begins to decline.

DISEASES OF SHEEP

We know very little about—and of their treatment less—never doctored a sheep that didn’t die. But we think that they are freer from fatal diseases, in this climate, than any of our domestic animals.—Good treatment, regular doses of salt and ashes, salt and tar, and sulphur, extensive range, with wood pastures and pine fields in Summer, and plenty of food, and shelter enough in Winter to protect them from rains and winds, and they will rarely be troubled with diseases. The master’s eye is the best physic for a sheep—so some writer has very well said.

DISEASES OF SWINE.

Dr. BROYLES has well said, that the importance of attending to the study of diseases in hogs is undervalued. Our ignorance in the matter is one of the great reasons why we pay so dearly for our bacon. “I can’t raise hogs,” you will hear half the farmers of the country say, “they have taken to dying out so.” We regret that Dr. BROYLES has disposed of the subject so summarily.

Quinsy.—An old gentleman of our acquaintance, who was a capital hog breeder, used, in addition to ear bleeding, give the hog pine top slops, and he would have the hog caught, his fore legs well washed in soap-suds, and rubbed with a corn-cob, so as to open the “devil’s tracks.” Whenever the secretions flowing through the “tracks” became locked up the hog took sick. Any negro can point out for you the “devil’s tracks” on a hog.

Staggers.—A very fatal malady. Bleeding from the ears and copperas will cure, if taken in time.—But we have seen pigs taken with a kind of staggers, and die by dozens before anything could be done.

Kidney Worms.—A common malady Dr. B. does not enumerate. Calomel in doses of 10 grs. 3 times a day for a week, will effect a certain cure.

Vermin.—Are very troublesome to hogs, and almost indestructible. Corn soaked in copperas water, tar, sulphur, spts. turpentine, train oil, fish brine, all have been recommended.

With the hog, preventives will be found the best policy. Feed him well, keep him as much as possi-

ble upon clover pastures, let salt, charcoal ashes and copperas be now and then mixed up for him—don't let him sleep long in the same place, or lay about manure piles, old houses or stables—let him have pine roots plenty to dig after, and mud and water *ad libitum*.

DISEASES OF DOGS.

A mean dog is not, or should not be called a domestic animal. If diseases would kill off the mean dogs we would there were more of them. We are not subscribers to the adage, "Love me love my dog," to a very hearty extent, or we fear our friends would be few. The best pill we have ever administered to a dog, is a blue pill at a distance—one dose generally is sufficient for kill or cure.

OUR BOOK TABLE

We have not the good fortune to be often called on for an expression of opinion on the merits of books, laid on our table. Publishers do not seem to think the opinion of the agricultural press South worth much, or they think we live in a very out-of-the-way corner.

We are indebted to the publishers, Messrs. LIPPINCOTT & Co., for a copy of a work on "Mileh Cows and Dairy Farming, by J. FLINT"—a volume of some 400 pages, well filled with information very important to cattle breeders. It is a new work, published in 1858, and contains all the new ideas upon cattle, and is especially clear upon the Guènon escutehion theory, which seems now to be somewhat understood, and believed in, by dairy-men and breeders. It is the best book we have seen on the subject, and may be had at P. B. GLASS' Bookstore, Columbia, S. C., for \$1.25 per copy.

We are indebted to the energetic Secretary of the U. S. Agricultural Society, BEN. PERLEY POORE, for a copy of the Quarterly Journal of Agriculture, issued by that Society. It is marked by the usual earnestness and faith in the ultimate success of agricultural reform. To the Secretaries of various State Agricultural Societies we are indebted for copies of Premium Lists for the ensuing Fairs, all of which afford pleasing assurance of the deep interest now taken by the people in the improvement of agriculture.

Our thanks are due to the State Geologist, Mr. LIEBER, for his Report, No. 3, on the Geological Survey of Greenville and Pickens.

There is very little to be found in the Report of these districts of much interest to the Agriculturist; but it abounds in Geological and Mineralogical information of a very interesting character. We confess to a disappointment in not finding more lime and copper; but such things can't be helped. Nature, in her bounty, diffuses her gifts according to her own laws, and if in throwing up the Blue

Ridge she has put most of the copper on the other side, we must not complain.

The technicalities necessarily employed in Geological and Mineralogical Reports, will always make them more or less sealed books to the million; but if these Reports are published "*pro bono publico*," and it is desired to diffuse knowledge and stimulate our people to improve, would it not be well to attach to each Report a concise glossary? What does the general reader know, and where can he learn, the meaning of such terms as arenaceous, saceharoid, breecia, orographie, and oryctognostic? And without a knowledge of such terms, the most of what he reads is all Dutch to him.

For the Farmer and Planter.

GERMINATION AND VITALITY OF SEEDS.

MR. EDITOR:—I have been very much interestd by a table published in the last Patent Office Report, giving a summary of experiments as to the vitality and germination of seeds. It is a question of more importauce than one is disposed to think.

A stand of any plant upon the ground, is indispensable to make a good crop. You cannot expect it without good seed, and in the introduction of an improved husbandry, so much dwelt upon by our agricultural writers now-a-days, by sowing more grass and small grain, we will find ourselves still more liable to be imposed on. In fact, how irregularly do the seed we sow come up, and what guarantee have we that the seed sold to us by the seedsman is old or young? Look at the following abstract from the table:

	Age of seed.	No. sown.	Germinated.
Corn,	3 years old	300	127
Oats,	3 " "	300	237
Oats,*	3 " "	300	210
Wheat,	3 " "	300	163
Rye,	3 " "	600	4
Barley,	3 " "	300	167
Millet,	2 " "	400	178
Melon,	9 " "	150	50
Turnip,	3 " "	900	335
Cabbage,	3 " "	150	11
Cotton,	4 " "	8	2
White Clover,	3 " "	450	22
Red Clover,	3 " "	300	49
Pea, garden,	3 " "	150	94
Bean, Windsor,	3 " "	75	71
Bean, Canada,	6 " "	50	42
Red Pepper,	3 " "	175	33
Parsley,	3 " "	350	52
Parsnip,	3 " "	300	20
Carrot,	3 " "	200	79
Beet,	3 " "	125	155
Salsafy,	3 " "	100	32

* Preserved in wax cloth.

"Grouping the species," says the writer, "according to their natural orders, the following selected will give some idea of those that retained their vitality longest. Gramina 8 years, Liliacaeae 10 years,

Coniferae 12 years, Malvacae 27, Leguminosae 43 years, Rhamnaceae 21 years, Cruciferae 8 years," &c. Some very sensible directions are given in regard to preserving seeds. All the complicable processes are condemned, and it has been found out by actual experiment that the plainest way is the best.

1st. Let the seeds be thoroughly dried, by exposure to the sun (not fire) or in a dry chamber or loft; this is of the first importance.

2d. Let the papers also, or canvass bags, in which they are packed, be equally dried.

3d. Let the smaller packages be tied up separately and placed loosely in canvass bags, so as readily to be shaken; and all kept in a dry, well ventilated place.

O. P. Q.

BEST BREED OF HOGS.

If any of our readers should chance to be laboring under an attack of dyspepsia from too free an indulgence in bacon, we commend to their perusal the following on the best breed of Hogs, clipped from that good old paper, *The American Farmer*. It is too good a thing not to be passed around:

"A farmer, who communicates his views through a New England journal, after going over all the choice breeds of hogs—the Berkshire, the Leicester, the Suffolk, the White Chester—says, the 'White Chester are a large, deep sided, small boned breed, will weigh from 400 to 500 pounds at 12 months old, when properly fattened. I think them the most profitable swine for farmers. Of grades, there is the Leicester crossed with the Suffolk or Berkshire boar; the progeny will be finer in the bone and mature earlier than the Leicester, and will weigh heavier and produce more side pork than the Berkshire. For a pure breed, I consider the White Chester superior to all others; they combine, in a great degree, the large pork-producing qualities of the Leicester, with the fineness of bone and early maturing of the Suffolk and others.'

"We find the above in one of our exchanges. On the Hog question we do not recognize our New England friends as good authority. They spoil their hogs by making huge beasts of them, and then the Philanthropists get up a hue and cry against the animal, forbidding the people to eat his flesh under pain of swallowing horrible tape worms. The hog is a good creature and a decent, if you give him the opportunity of a comfortable and respectable mode of life. He is not filthy of his own accord. He is a hog truly, but not so much to blame for that, as people who make hogs of themselves. With a fair chance he is much the more respectable personage, and does not hold his head so high.

Our idea of a true hog is something that you may make *Bacon* of—Maryland Hams—Virginia Hams—North Carolina Hams; a Southern Institution, that might persuade an abolitionist into good behavior. For this special purpose, the Chester will not do, the Leicester will not do, nor will any other do half so well as the breed slanderously denominated the "land-pike." A hale, hearty, healthy fellow who has roamed the forest for acorns and chestnuts, drunk pure water from the streams, and, on a pinch, jumped into the corn field for a week or so; one of

those sagacious, enterprising, well-to-do hogs, that if not taken care of by his master, has enjoyed a large liberty of taking care of himself. Take him up at eighteen months old, and feed on corn and pure water till the middle of December, and you have the true, genuine bacon hog—a hog to make a Virginia ham of.

But is it a profitable hog to raise? My dear Yankee friend, the question is not profit but *bacon*. If you like fat pork and molasses, take your big four hundred pound hog, that has sweltered twelve months in a dirty sty—and beware of the *tape worm*. Take the profit if you will, but leave us our Ham.

But compromise is the order of the day, and something, we suppose, must be yielded to progress. How shall we get around the dollar and cent question, and still save our bacon? We say first, take a cross of the Chester upon a good country hog, to get earlier growth and size; upon this, cross with the Berkshire, and keep to that as the best bacon hog of the improved breeds. Keep them in a grass lot, and feed them some grain from March till fattening time, and you will have at nine months the best substitute for the other. But with Berkshire, Suffolk, Chester, or what not, the farther you get away from the Virginia and Maryland breed, the more you will sigh for the good old days of 'hog and hominy.' These are what a *Patuxent Planter* might call your "first family" hogs; hogs that landed probably with the settlers at Jamestown; that descended directly from the herd which roamed the forest of Cedric the Saxon, and grunted responsive to the horn, of Gurth his 'born thrall.'

From the Southern Field and Fireside.

AGRICULTURAL LETTERS FROM HANCOCK.

BY AN OLD MEMBER OF THE PLANTERS' CLUB.

The Guano dynasty—Interesting experiment—Guano as a fertilizer, as an exhauster.

MR. EDITOR:—As we of Hancock are living under what might be termed the guano dynasty, agriculturally speaking, it might be well for us to advert to some facts and experiments, in reference to this powerful fertilizer, for the benefit of those who know but little of it, particularly in its application to cotton. There have been as yet but few exact, reliable experiments, made by our planters, as to comparative results between manured and unmanured acres. Mr. David Dickson, who is the head and front of this system, first introduced guano into this county and applied it successfully to the cultivation of cotton. He satisfied himself years ago that it would pay on cotton, when prices were remunerative. He does not however think that it will pay on wheat. Mr. Dickson's annual outlay for guano is now from seven to ten thousand dollars, upon which (and he is a calculating man) he says he realises one hundred per cent.

Other planters of distinction, as Judge Thomas, Hon. T. I. Smith, Col. T. M. Turner, Thomas Dickson, H. C. Culeur and W. E. Bird, Esqs., after having tried it for several years, are equally satisfied with Mr. Dickson as to its results, and show their faith by their works, in the purchase of large quantities annually. The present year the amount will run up to a high figure, for this article alone, besides salt, ammoniated phosphate of lime, &c.—Indeed, for several months during the spring, there was a war of wagons waged between merchants and

planters, the one fighting to get their goods at hand for the spring trade, and the other to get their manures in time for cotton planting.

We have seen in several cotton fields rows left without any guano, side by side with others containing this manure, and the difference has been truly remarkable. The most satisfactory experiment however, as to its fertilizing qualities, was made the past season by Mr. Augustus Dunn of this county. He planted two acres in cotton, on which he put two hundred and thirty-five pounds of guano. Every other row he manured in the drill with guano, and the intermediate rows were left without manure of any kind. The soil was of a mixed character, partly silicious, and partly aluminous.—The aggregate amount of fine pickings gathered from these acres, stands thus:

<i>Manured acre.</i>		<i>Unmanured acre:</i>	
1st picking.....	178 lbs.	1st picking.....	24 lbs.
2nd "	295 "	2nd "	40 "
3rd "	647 "	3rd "	194 "
4th "	253 "	4th "	200 "
5th "	224 "	5th "	183 "
1597		641	

We have introduced the separate pickings for the purpose of showing how rapidly the guano acts as a maturer of the cotton plant. Take the three first pickings, and we have eleven hundred and twenty-eight pounds against two hundred and fifty-eight—a remarkable difference truly.

According to the old rule of one-fourth lint for one of seed, and allowing ten cents nett average for the crop, the manured acre made thirty-nine dollars and sixty-seven cents, while from the other only sixteen dollars and two cents was realized. The guano laid down, cost about ten dollars and sixty-seven cents, which leaves twenty-nine dollars, and expenses paid. Allowing that the overplus of cotton seed pays for the extra trouble of picking out the cotton on the manured acre, preparing and putting in the guano, &c., here then we have a profit of thirteen dollars on an investment of ten dollars and sixty-seven cents, being considerable over one hundred per cent. At eight cents per pound, the profit would be about fifty per cent.

We like exact, and reliable experiments, such as the above. There is something tangible about it—something that is above and beyond mere theory, and we do not wonder that some of our leading planters should assert that they can wear out a plantation, and give it away, and make more money by this process than upon the old tedious composting plan of hauling in litter and hauling out manure. But one experiment should not decide so important a question. All the circumstances may have been favorable to the application of the guano, and such a result might not happen again in ten years.

Another question of much magnitude is here to be decided. How does guano tell on succeeding crops? Will the same amount, put on the same acre, produce like results the second year? Will it the third, the fourth, and every succeeding year? If so, then certainly we have found the philosopher's stone, which turns everything it touches into gold. If not, then guano is simply a fertilizer, and not an ameliorator of the soil, as we have always contended; and unless other salts are applied, to keep up the deficiencies, as is done in England, the landed estates of the South will, we doubt not, depreciate more rap-

idly than under the old skinning process of our fathers, and more hopelessly too.

Our position in reference to the guano question has been misunderstood. We have never, as some think, contended that it will not pay, looking to immediate results. Nor have we opposed its purchase, and application under a proper judicious system, particularly to certain classes of land. But we have doubted, and so expressed it again and again, whether the purchase and application of guano, or any other partial manure, will pay, taking a series of years together. By which, we mean to say that the deterioration of soil, by a long continued course of these partial stimulating manures, will eat up all the profits, by depreciating the landed estates.

Few men are devoted to agriculture only as they see money in it. And that kind of farming which brings into hand, at the end of the year, the largest number of bank bills, is the one pursued by the great majority. They do not look to ultimate results. They care not for fine stock, a proper rotation in crops, a careful protection of the soil from waste, so they can, by a hurried and driving system, count the greatest number of cotton bales, as the result of the year's labor. We admit that profit is the prime object of agriculture, as of every other occupation. Without this, it has no stimulus to cheer the toil-worn laborer, even though he be a hireling or a slave, much less the planter himself. But there is a way of reaping profits in farming without injuring posterity, and leaving to our children a desolate waste of old fields and gullied hills, as patrimony.

Just here comes in a question of morals, not to say of patriotism. Is it right to pursue a reckless, wasteful system of agriculture, because we can, under this method, cultivate a few more acres, and make a little more ready money? We have heard it asserted by respectable planters, good men and true, that, if they could extract all the cotton from their land in one year, they would do it, and leave it a barren waste. And they contend for the principle of cutting down and wearing out the land as fast as they can, and then apply partial manures to extract the last mite of substance from it, regardless of the claims of posterity, and the prospective glory of their country.

What! is not that a good system of agriculture which takes more from the soil than is returned to it? We have feared that this will be the result of the guano system, and hence we have looked with a suspicious eye on the immense amount of guano now being purchased by our planters. It is a dubious, dishonest system, view it as you may. Is it possible that young, fertile, virgin America should, at this early date of her history, have to seek for fertilizers thousands of miles away, at high prices, with which to carry on her agricultural operations? Must she come in competition with old Europe in the purchase of this costly article, when, on every farm in the country, the same element—*ammonia*—may be husbanded at a cheaper rate? Prospectively this system presents a gloomy aspect. Should cotton fall, it will have to be abandoned, and then it will be seen how pitiable the crops will appear on lands that have been drawn upon so freely. Should guano rise, as it must do ere long, the same result will take place. Is it not perceivable that an agricultural system, so dependent on fortuitous circumstances for its very existence, is a false system, and one that must utterly fail before the rising light of science? P.

Horticultural and Pomological.

WILLIAM SUMMER, EDITOR.

WORK FOR THE MONTH.

This month, with its continued hot weather, makes it necessary to give some care where transplanting is to be done. Water and draw the earth about the plants, and you will succeed without difficulty—they will make a good crop. With fine *Cabbages*, *Squashes*, *Cucumbers*, *Beans* and *Tomatoes*, you have vegetables adapted to the season, and a wholesome meal can at all times be prepared. *Beets* are now in great perfection, and where a failure, the *Turnip*, and other early varieties, may yet be sown. Sow *Turnips* at two or three different periods this month. We usually put in our principal crop for table use, about the 20th of this month—having found, from years of experience, that this is the best time to escape the bitter flavor, which is caused by the sap being checked at the period when the bulb is being rapidly formed. Prepare the ground by thorough manuring, plowing, and harrowing, until the soil is mellow and fine to receive the seed—then brush under the seed. With the addition of guano or super-phosphate, the young plants will receive a vigorous growth, and soon advance to the rough leaf, when they are safe from the *turnip fly*.

No labor will give a better return than that bestowed on the turnip crop, whether for table use or for stock. Though out of our immediate province here, we cannot help pressing this upon every one who keeps even a single cow; and stock which receive even a small quantity of *Ruta Bagas*, or other turnips, daily, will come into Spring in much better condition than when fed upon dry provender. The *Globe Turnip* is used as a substitute for the *Ruta Bagas*, though not so nutritious. The last month we gave the most approved varieties for table use.—Purchase your seed of reliable seedsmen, in quantities of quarter, half, or pound packages, as required—the small papers are often left over from last year's sales, and will fail to give a good stand.

Sweet Potatoes will require careful weeding.—*Strawberry* beds must be kept clear of grass and weeds, and preparation made to plant out new beds. Wood's-earth and ashes, with deep tilth, is what is required. *Tomatoes* may be propagated by cuttings, by taking the tops, cutting off the tips, and prepared as a cutting. Shade until they root, and they will continue to give good crops until frost.

EMPLOYMENT, which Galen calls "nature's physician," is so essential to human happiness, that indolence is justly considered as the mother of misery.

NEW SERIES, VOL. I.—32

For the Farmer and Planter.

FRUITS FOR THE SOUTH.

MR. EDITOR:—As you have a Pomological department in the *Farmer and Planter* (a very good plan I think, and one which ought to be adopted by all agricultural journals) I will ask a corner there to have a "talk" with our Pomological brethren.

Aiken and the "surroundings" have led off finely in the department of fruit-growing, and the handsome returns which are received, make it something of more importance than a mere amateur business. It is well that we are able, in this way, to get back some of the annual tax we pay to our Northern "brethren" for their "notions"—to turn the steady stream of "outgoings," even if only for a moment, into a little rill of "incomings." All that is necessary is energy and perseverance to convert this little rill into a stream of ample power and volume. Let us add our bucket of water to the stream.

I am pleased to see that you promise the beginning of an "Essay on Pomology," in the next number of the *Farmer and Planter*. As there is no one more competent than the experienced founder of *Pomaria*, to do this, so there is no time more propitious than the present, when there is a growing interest in the pursuit of fruit-raising, both as a means of pleasure and profit.

I think, Mr. Editor, your experience and observation will bear evidence to the fact, which is the very foundation of success in this business, if we are to expect any progress, viz: that the difference in our climate and soil from those of Europe and the Northern States, demands, for success, not only different modes of culture, training and pruning, but also that we must procure native Southern seedlings which originate here, and are, therefore, better adapted to those peculiar conditions, than those which have sprung up in climates differing from ours.

Every Pomologist of any experience, will bear witness to continued failure and disappointment, when using Northern trees of the apple, plum and cherry. Among peaches, though we have many good varieties imported from the North, there are some which have a great reputation there that do not come to perfection with us, whilst on the other hand, some of our very best varieties, as the Lemon Cling, Kennedy, and allied kinds, do not attain perfection there.

This is what we might expect from difference of seasons. We have at the South, at least eight months of growing time for the peach, with uniform and continued heat—there, scarcely more than five months, with varying temperature, and extremes of heat and cold, unknown here.

These different conditions of climate between the North and the South do not effect fruit alone, but

exert their influence upon all the varieties of domesticated animals and plants.

It seems to be one of those mysterious laws of Nature, connected with the distribution of qualities in vital organs, that varieties of plants and animals, long subjected to cultivation, (artificial treatment,) have a tendency to form varieties; and that these varieties are especially adapted to the place of their origin. There they have all the conditions which brought them into existence, and we may hence infer that those conditions are essential (in a main degree) to their full development.

Is not the disregard of this law the cause of our frequent failure here at the South, in using varieties which have been proved suitable to Northern latitudes? and does it not teach us, that if we are to expect ultimate success, we must work out our own necessities? We must adapt our culture to those modifications in the natural laws of vegetable and animal growth, which are found to prevail all over the world.

It is eminently proper, therefore, that we should encourage the cultivation of seedling fruits at the South, and our Pomological Association has done wisely in offering large premiums for these objects.

My object in writing is to draw out some of our Pomological friends to give us the result of their observation. We must be up and doing. Let us compare notes freely—let us have from each one who takes an interest in fruit-raising, an account of all the fruits that are found suitable in their locality—the particular qualities of each, time of maturing, and notices of any new varieties worthy of cultivation, especially the very early and the late, which are not yet in the catalogues of nurserymen.

These catalogues themselves need revision, many of the same fruits being repeated under different names; but it is only by free discussion and interchange of opinion that this can be done properly.

I invite, therefore, from you, Mr. Editor, as an able pioneer in this work, and from any of your correspondents, a response to this call. I know the zeal and enthusiasm which prevails among all true Pomologists, and I shall be disappointed if this appeal does not meet with a ready response.

I shall, in the next number, give you our experience here, around Aiken and Kalmia, of the different varieties of fruit.

R.

Aiken, S. C.

NOTE.—We are pleased to present our readers with the above valuable article, from the pen of one of our most gifted writers and observers. There is a growing interest in the subject, and we only want to have the matter well stirred to give it an impetus. It is astonishing what ignorance prevails, even in other-

wise well-informed quarters, of what we rarely now possess here at the South—and the strange indifference towards an easily purchased luxury, in the reach of every man who owns a farm, or a large town-lot. We pay annually a heavy tax for the miserable, half-ripe fruits from Cuba and the West Indies, when, at half the cost, we could have superior fruits around our homes. These may be had during the entire year in a fresh and wholesome state, with the little trouble of hermetically sealing them.

The Susquehanna Peach, from which the trees were grown in your possession, was obtained from Dr. BRINCKLE, of Philadelphia, who first disseminated this valuable variety. They are not too highly colored—this is to be attributed to our superior climate. The meetings of your association will do much good, and the premiums are directed to an object that will bring out valuable varieties, peculiarly adapted to the South.

The Essay on Pear Culture, read by Dr. L. E. BERCKMANS, we shall anxiously expect, and will be glad to give it a place in our department. Dr. B. has much experience in Pear culture, and was the companion and associate of Van Mons, and of Bivort, who have given to the world such a number of choice varieties of this delicious and wholesome fruit.

With us the Pear attains great perfection, and the man who does not plant Pears ten years hence will be considered behind the spirit of the age. We ask the careful perusal of this article, and those which are to follow.—ED.

For the Farmer and Planter.

STAWBERRIES, &c.

MR. EDITOR:—The July number of the *Farmer and Planter* has just come to hand, and in your reply to some inquiries of "G. M. I.," you say, "a good mess of strawberries (Albany) has been picked to-day, 15th of June." In January last, a friend brought me about 3 dozen plants from the neighborhood of Macon, Georgia, and intending to remove to a new home, I put them in a box with, I thought, a sufficient quantity of dirt, for safe keeping, until a place could be prepared for them. On the 20th of February they, with others from your nursery, and my old garden, were transplanted. Only 15 of the Georgia plants lived. In April we occasionally gathered a few from all the varieties, and also in May. The weather became dry about the 14th of May, and continued so until the middle of June; then a good rain, and no more until 2d inst. The plants (Georgia) were found to have about a pint of ripe berries on the 27th June, and again the 4th and 7th inst., a goodly number of most delicious berries. There are now a few blooms and some green berries on the vines—I did not get the name of them. They are rather a long, dark-red berry, resembling Pea-

body's Hautbois. Thirteen plants of this "*much puffed*" variety did not yield thirteen berries in two years, and I was about to cry out *humbug*. May not a more favorable location than Pomaria or *Littleton* have been found? I am sorry the Agricultural Society of South Carolina became so soon satisfied with our Summer fruits. Had they appointed an *ad interum* Fruit Committee, at Columbia, I would have permitted them to have had strawberry ice cream on the memorable Fourth. We need not think, hereafter, to get premiums for fruit, at the Annual Fair, when you nursery-men can exhibit from 25 to 75 varieties. The Fairfield Society have weekly exhibitions; and, if we are amateurs, must pay *one dollar* and send up the fruit.

Friend Gibbes' Wool Factory will, to some extent, at least, increase the interest in sheep raising; and the offered premium for dog's scalps will cause the death of full many a worthless cur and bawling hound. Will not the Greenville Doctor like to see a move in that direction?

Living in a neighborhood of pine-straw and steam saw-mills—which is preferable for mulching purposes, saw-dust or straw? We have tried both, on a small scale, upon strawberries, apples, and grape vines. The grape does well on and about

July 8th, 1859.

HOLLY-HILL.

REMARKS.—The Albany, and several other varieties, continued in fruit with us, until the 4th July. The Georgia variety, from your description, is Walker's—an excellent variety, continuing late in bearing. Peabody's Hautbois has disappointed cultivators, even at the North. I have given it a damp location, rich in every necessary ingredient, and will give the result next season, though we have 20 varieties superior to it.

The Executive Committee failed to appoint an *ad interum* Committee for the season. The partial failure of fruits generally has rendered it unnecessary for this season.

If you can have access to saw-dust, you will find it most valuable for mulching, especially on heavy clay soils—use it freely in your garden culture, and you will be benefited.—Ed.

TO DESTROY ROSE BUGS.—When the rose bug first makes its appearance, sprinkle your bushes profusely with the pollen of the flowers of the *Alanthus* tree, or pour upon the bushes, through a watering-pot, a strong decoction of the same. You will presently see hundreds of the bugs falling to the ground, there to die. The operation may be repeated once or twice a day, until they entirely disappear, which generally takes place in less than a week.

A GEM OF WISDOM.—Few things are impracticable in themselves, and it is for want of application rather than means that men fail of success.

For the Farmer and Planter.

MR. EDITOR:—You have told us how to cultivate the tomato, how to prevent the cut-worm, how to preserve and keep the tomato in Yeoman's fruit-bottles, &c., &c., &c.; but you have not yet told how to stop that pest and destroyer of the plant, the large green worm or caterpillar, which, when it does not destroy the plant, injures the vine so much as to render the fruit worthless. Lime and plaster have been tried in vain. These worms are so nearly the color of the leaves, that it is hard to find them, until after the vines or stalks are stripped bare.

The above has been sent to a Northern agriculturist, and I thought, perhaps, you might give us some light on the subject.

A SUBSCRIBER.

REMARKS.—With us the Tomato is entirely exempt from the attacks of insects, and we have never seen the green worm or caterpillar, of which our correspondent complains. Prevention will be better than cure in this instance, and from Mr. SAILSBURY'S Analysis we find that soda and the phosphates are the most abundant elements; and these, if wanting in the soil, may be supplied by common salt and bone-dust—super-phosphate, or Peruvian guano, in small quantities, hoed in about the plants, would insure fine crops of fair, sound fruit. The vines should be supported with brush.—Ed.

For the Farmer and Planter.

THE BIG IRON-GREY HORSE AND THE APPLE SHOW-BOX, OVER AGAIN.

MR. EDITOR:—Everybody who paid a company of strolling Yankees, a few years ago, to cut to pieces their apple and pear-trees, and graft upon them worthless fruits, certified to be exactly like the splendid specimens the man on the iron-grey exhibited in his show-box, to their alluring eyes, will not forget their disappointment, when they found they had been sold. I must ask the favor of you, Mr. Editor, to insert a very sensible article in the present issue of your journal, clipped from the *Southern Cultivator*, whereby we are informed that the country has been regularly districted off, and enterprising tree-peddlers assigned to each district to do the business *secundum artem*.

Hitherto this business has been done only on a small scale, chiefly confined to the cities, commission merchants, auctioneers, agents, &c., but now the country is to be canvassed and conquered.

And we are sorry to say, that, notwithstanding the almost unanimous conclusion of all experimenters is against Northern trees, there are still found intelligent men amongst us who persist in recommending their friends to Northern nurseries.

CAVEAT EMPTOR.

For the Farmer and Planter.
TURNIPS.

MR. EDITOR:—The season for turnip sowing is at hand, and it may not be amiss to throw out some hints for the benefit of beginners.

Our seasons have become so uncertain, that everybody who wants turnips should never allow a season in July to escape. Have the ground thoroughly plowed, subsoiled and pulverized. Throw it up into beds just wide enough to plow them out. If your lot has been cow-penned well it will be good enough—if not, sprinkle a little guano in the drill and bed upon it, and sprinkle a little super-phosphate of lime, or ashes and plaster in the drill with the turnips.—This will start them to growing off rapidly, and put them out of the way of the fly. If you do not choose to try fancy manures, put your stable manure deep, and bed on it—add all the serapings about negro quarters, ash-hoppers and wood-yard to it. Be sure to sow *plenty* of good seed—put them in thick, cover very light, and chop out as soon as the turnip leaf gets rough, and the fly will then not trouble it much. It is a good plan to sow radishes with turnips, as the fly prefers the radish leaf.

The next work must be more particular—clean out nicely and thin to a stand, and use the plow lightly. When you lay by sow barley, wheat or rye, in the drill between the turnip rows—it will come in admirably as a bite in Winter, or Spring for soiling.

VARIETIES OF TURNIP.

The Ruta Baga for early sowing is the best stock-turnip, but requires richer soil and better management than the rest. The finest turnips I have ever seen were sent out by the Patent Office last year—but the English imported turnips rarely mature their seed, and the turnip rots in one Winter.

The Old Norfolk, the White Globe and the Yellow Bullock, all do well, grow large, and stand the climate well.

The Red Top Strap Leaf will mature earlier than any other, and therefore is best adapted to late sowing. It is one of the best of eating turnips, but does not make much salad. The old Flat Dutch turnip is a hardy and good variety.

One of the greatest drawbacks to the successful cultivation of the turnip crop with us, is the uncertainty of the season and the fly. The first we cannot control—the effects of the second may in some degree be modified by good management.

The turnip-fly, or flea, as he is called by many, is a very small, shiny, black insect, with his hind legs fixed for jumping. You may see him leaping all over the patch. The fly lays its eggs on the under side of the leaf. They hatch out in 8 or 10 days, and begin their work.

The only remedy is to force the turnips to grow

rapidly—dusting charcoal, ashes, soot and plaster, sometimes has a good effect. But be sure to keep the boys out of the patch with old blunderbusses—don't believe the old notion that the "kildees" are eating up your turnips—they are after the flies, and will catch up a hundred of them to where they do a turnip.

If you have any patches of new ground, which have bad stands of corn or cotton on them, or ponds dry enough to prepare, sow a few turnips over them—they will pay very well, some day. TUBER.

From the Southern Cultivator.

PRUNING FRUIT-TREES.

EDITOR SOUTHERN CULTIVATOR:—In reply to the inquiries of Mr. Keon, we will give our own method of proceeding with young fruit-trees. We prefer, in the first place, a young, thrifty, straight shoot or graft, in preference to one that has thrown out branches in the nursery-row, for the reason that we can get a good foundation in its straight trunk for a symmetrical, well-formed tree, if properly managed.

After we have planted our tree, we head it down to about 3 feet in height, and should it throw out more shoots than we wish to retain to form a top to our liking, we rub or pull them off from time to time, and only retain such as are necessary to form the top. This is our plan of proceeding with apple and standard pear trees.

As regards the heads of peach-trees becoming too thick or filled with spray from pursuing the shortening-in system, we can assure all that this is the very thing in our hot Southern climate we wish and aim to accomplish; instead of letting in the sun and air, our aim and efforts should be to exclude it—shade is what our fruits want.

As the peach only bears one crop on its wood, and the growth of this year forms the fruit-bearing wood for next year, and so on from year to year, it will at once be perceived that by the shortening-in method we force the tree to throw out shoots in the interior instead of at the ends of the limbs alone, as is the case when left to its own way.

We have never seen an instance where a peach-tree needed its branches thinned out, but when apple and pear-trees have been transplanted from three to four years the smaller spray in the interior should be cut away, but never any large limbs, unless through previous neglect some should have grown so as to prove injurious or unsightly. J. V. B.

THOROUGH TILLAGE.—At one of the Irish agricultural meetings, one of the speakers remarked—and the truth may be well applied in this country:

"What brought out the immense agricultural wealth of Scotland? and what enabled the small farmer in Belgium, who, on seven or eight acres of light, sandy land, was able to do better for himself and his family, than we can do on twenty or thirty acres of land in this country? It was not by allowing three-fourths of a light tillage farm to remain in poor herbage, and making the other quarter pay the rent. It was because the farmers in those countries he alluded to, made agriculture a study, a duty, and a pleasure; and because no man there would keep one single acre of land more in his possession, than his capital and his means would enable him to cultivate."

[In consequence of sickness in the Agricultural Editor's family, the following article was not prepared until the form to which it properly belongs was worked off; but from the desire manifested by our readers to be kept posted up in their monthly duties, we have encroached upon our Pomological department so far as to insert it here.—PUBLISHER.]

HINTS FOR THE MONTH.

The months of June and July have been very dry. In many sections of the State rain has not fallen to the depth of half an inch, in six long weeks. During this period, the wind for much of the time, has blown so strong as to fracture the roots of the corn—the sun has been hot, and the nights dewless.—For one week the wind blew strong from North-East—thermometer down as low as 56 in the morning, and fires comfortable. The barometer has stood at 29.1-10 nearly the whole time. It has been to many sections a disastrous season—the old corn is spent—the young corn depends upon the future.

Cotton is smaller, for the season, than we have ever seen it, but looks, where it has been well cultivated, promising—there is no such thing as prophecy about a cotton crop. The prospect is a gloomy one for the provision crop, and every planter will act wisely, not only to take care of his surplus, but use all the means he can to “lay up for a rainy day.”

Sow down, when laying by, rye, barley, wheat or oats, (half bushel per acre,) on all your corn and cotton land, not intended for small grain next year—it will serve admirably to save the corn crib. Sow down all your lots in barley, rye or wheat—plant all the missing spots in corn or cotton, in peas or sugarcane seed.

Mow all the nooks and corners, swamps and branch margins, to secure all the hay you can. Take care of your chaff and wheat straw—house it and keep it clean for Winter use. Cut down every stalk that will not make an ear of corn, and cure it—save peas and pea-vines, and everything that will do for food.

Sow Turnips, beginning with Rutabagas and ending with Red Top Strap Leaf, which will often make good turnips, sown in October.

Haul all the manure out of stables, wood-yards, ash-houses, negro quarters, and fence corners, into turnip lots; prepare the ground well, and be sure to put down plenty of seed for you—and the fly.

The English farmers say that phosphate of lime is to the turnip crop, what plaster of paris is to clover, “a special manure.” If you have any new ground patches, clear them up, and sow turnips.

Cotton will not need much work after this, save to keep the sweeps running very shallow through it, and the hoes picking out the weeds and bunches of grass, and loosening the surface soil. Be careful—

you cannot be too careful, about plowing and hoeing now—don't cut off roots, or break off limbs, and if your cotton is *big enough* top it as early as possible—late topping rarely does any good.

Potatoes.—Clean well—have the bunches of grass picked out—lay by in broad, flattish beds. If you have wet weather, clip off vines and set out, to make your seed for next year.

Meadows.—Now, if you have not grass, mow down the weeds—it is the only way to clean a meadow.

Branches.—During this month clean up branch margins, old hedge rows, and do all manner of sprouting.

Thistles.—Have you a Spanish thistle, a Canada thistle, or any other pest on the farm? Down with it, if not down before this, and follow up the war.—We annually discover new pests, in the way of weeds, grasses and insects being introduced amongst us—they cannot be watched too carefully.

You can trace the Spanish thistle from the villages into the country, along the roadside, everywhere—introduced among the packing of drugs, crockery-ware, and such things, sent from the North to our merchants.

The nut-grass was spread all over the back country very nearly, by the same means. Keep a close eye on the foreign intruders—they are, many of them, abolitionists.

Plantation Economy.—Have your hamper-baskets got ready for cotton picking season. Have all your farm-houses repaired, re-covered, and set to rights. Have all the hoes, harrows, plows, cultivators, rollers, &c., put in order, and placed out of the weather. Have wagons and carts repaired and put under shelter—wagon-gear mended, plow-lines, back-bands and hame-strings hunted up. Have scythe-blades cleaned and put away, and cradles put in press.—Fill up stables with litter—fix up gates, doors and fences. Get gate posts, rails or timber to be selected for durability.

Hygiene.—Clean out thoroughly negro quarters—have everything scalded, scoured, washed and white-washed. Sprinkle solution of copperas over the floors of houses and yards, scatter charcoal-dust about, scrape up all weeds, chips, rags, dirt, and trash, and haul it into your turnip lots. Knock the daubing out of the upper cracks of the cabins, for better ventilation, and see that all the filth underneath is thoroughly cleaned out.

Look at the springs, clean them out, ditch round and protect them from filth and earth washings—good pure water is indispensable to health.

☞ Wherever you see a neat farm, be assured the manager is an economical man; where a farm is the reverse, the manager is not an economist.

From the Southern Cultivator.

TREE PEDDLERS FROM THE NORTH---CAUTION!

EDITOR SOUTHERN CULTIVATOR:—I deem it my duty to inform you, and through you, the agricultural public, of a gross fraud which a party of Fruit Tree Peddlers from the North are attempting (and I fear but too successfully) to practice upon our people. The whole country has been carefully *districted off*, and then closely canvassed by these gentry, whose style of operations is something like this:—They prepare strong glass jars or cans, filled with the best specimens of *Northern* fruit, preserved in alcohol, and exhibit these to the ignorant and unsuspecting, as samples of what may be produced *here*, from trees which they will furnish.

These fruit (seen through such a medium) are greatly *magnified* in size, and well calculated to deceive and humbug people.

Now I will lay down a few propositions, which you, in common with all experienced Southern Horticulturists, know to be correct; and then, if our people are foolish enough to invest their money in worthless stuff, let them suffer the consequences:

1st. None of the leading varieties of *Northern* Fall or Winter Apples are worth planting anywhere South of Virginia. Our seasons are so long and warm that they ripen prematurely, in July or August, and fall off the tree, rotten and worthless.

2d. The only late keeping apples of any value whatever for the South, are *Southern Seedlings*, raised here. Of these, our Southern Nursery-men have now at least 50 varieties, that cannot be obtained from the North, and the best of which are superior to any grown there. I include in this list the *Mangum* (or Carter), the *Shockley*, *Equinety*, *Stephenson*, *Oconee*, *Greening*, *Ralph*, *Nickajack*, *Green Crank*, *Limbertwig*, and many others—all of Southern origin, and better, in every respect, than the Newton Pippins, Spys, Swaars and Spitzenbergs, of the North. A few of the *early* Northern apples do very well here; but, in procuring these, *always get trees grown in the South*.

3d. Our Southern Seedling Peaches, in their season, are also better adapted to our climate, and superior in other respects to the Northern and European varieties. This is the proper climate of the peach, and our trees are far more vigorous and healthy than those of the North. Therefore, do not purchase any peach trees from the North. If you want the Northern varieties, get those that have been grafted or budded on Southern stocks.

4th. The same caution will hold good in regard to all other varieties of fruit trees, such as pear, plum, apriocot, nectarine, Quince, &c., &c. And in planting a vineyard, get Southern grown grape cuttings and roots, whenever it is possible.

5th. Do not be fooled out of your money by fancy-colored pictures of currants, gooseberries, &c.—These fruits are not adapted to our climate—they have been tried a thousand times, and always failed. We have a better currant than any cultivated at the North, viz: the *Amelanchier*, or "currant tree," (*Amelanchier Canadensis*, or *Botryapium*) sometimes called "Shad Flower" or "May Cherry." This delicious fruit can be raised on any soil, and bears profusely. It may be propagated readily from suckers, and I hope our Southern Nursery-men will, hereafter, keep a larger stock of plants on hand.

6th. Southern Nursery-men are now fully prepared to supply all desirable varieties of fruit and

ornamental trees, vines, roses, &c.—grown with especial reference to our own climate; and the Southerner who sends or gives his orders to Northern Nurseries or the peddlers, (while he is, perhaps, politically advocating disunion and non-intercourse!) can hardly be considered a *consistent man* or a *true patriot*.

7th. The cause of Southern horticulture and pomology has been sadly damaged by our failures with Northern fruits; so much so that many of our people are afraid to plant trees at all, not knowing the difference between those which are and which are not adapted to our climate. This retarding of the natural progress of our country in fruit culture has already cost us *thousands* if not *millions* of dollars, and still we are sending our money to the North for trash not worth half the cost of freight! Was there ever such "moon-struck" folly and inconsistency?

8th. To succeed in growing fruit in the South, get from Southern Nurseries, trees of Southern varieties, which are known by experience to suit our climate, and let the itinerating venders of Northern trees plant their "seions" in "free soil." What say you, Mr. Editor?

MALIC ACID.

Home Place, Ga., June, 1859.

REPLY.—We say that our correspondent is altogether *right*. There is neither any sense or necessity in sending to a distance for that which can be *better* obtained at home, and the particular evil of which he complains is really getting to be serious. We would rather have *one* Southern raised tree than *two* Northern trees of the same age and variety; and the remarks of "Malic Acid," respecting the superiority of our Southern Winter apples, &c., are literally true. In a private note, our correspondent disclaims any illiberal or sectional prejudice, and we are sure he does not cherish any such feeling. He is, in all such matters, like ourselves: only actuated by a desire that the *truth* should be known, and that our people may be awakened to their own interests. We feel it to be our duty to publish his timely and vigorous caution, and could add much more on the subject, ourselves, were it necessary.—Ed.

GUARD AGAINST VULGAR LANGUAGE.—There is as much connection between the words and the thoughts, as there is between the thoughts and the words; the latter are not only the expressions of the former, but they have a power to react upon the soul, and leave the stains of their corruption there. A young man who allows himself to use one profane or vulgar word, has not only shown that there is a foul spot on his mind, but by the utterance of that word he extends that spot and inflames it, till, by indulgence, it will soon pollute and ruin the whole soul. Be careful of your words as well as your thoughts. If you can control the tongue, that no improper words are pronounced by it, you will soon be able also to control the mind, and save that from corruption.—You extinguish the fire by smothering it, or by preventing bad thoughts from bursting out in language. Never utter a word anywhere which you would be ashamed to speak in presence of the most refined or the most religious. Try this practice awhile, and you will soon have command of yourself.—*New Jersey Farmer*.

Wholesome sentiment, is the rain which makes the fields of daily life fresh and odorous.

From the Country Gentleman.

TRANSPLANTING SMALL TREES.

It has been a very general, almost universal, desire, among tree-planters, to have large sized trees from the nursery. One person about to set out an orchard, wrote, "Send me *man* trees. I do not want puny little children—but large, full-grown specimens." Another said, "I want the largest trees you have—I don't care much what kind they are—but give me tall ones—if a rod high, all the better."—"But," the nursery-man replied, "smaller ones will be better in five years than these." "I don't care, I want big ones; I may not live five years, and I want fruit *now*." Three or four years after, the same planter called again. Without waiting for an inquiry, the nursery-man immediately remarked, "Well, I have some fine, large trees, which I can furnish." "Don't want 'em! don't want 'em!" was the answer. "I've had enough of large trees—they have cost me ten times as much labor to set out as the small ones I took from necessity. They have not grown one inch—are just the same size I bought them, although I have doctored them and nursed them, and they have borne me only a very few of half-grown, worthless fruit. The small trees have already outstripped them, and they have begun to bear large, excellent specimens."

These experiments have now become so numerous, that a change in the opinion of planters has generally taken place, in relation to the size of trees.—Where twelve feet were formerly demanded as a desirable height, five or six feet are now quite as satisfactory, and some find still smaller ones to do better. At a meeting of the Fruit Growers' Society, of Western New York, held at Rochester, a year ago, this subject was fully discussed, and none, who had ever tried the experiment with large and small trees side by side, could be found, who preferred the former. Many instances were related, and in every case, without exception, (good culture being given,) the small trees soon out-grew the others, and were not only larger, but incomparably more vigorous and thrifty. Two-year apple trees and one-year peach trees were preferred by some of the best cultivators present, to any of larger dimensions. And in addition to these advantages, the smaller trees are almost sure to survive transplanting, with scarcely a loss of one in a thousand; while the extra large ones, the roots of which must be greatly mutilated in removal, die by scores. The labor of digging up the large trees, the cost of transportation on them, and the cost of resetting them, are all several times greater than with smaller ones. Where they are to be sent some distance by railroad, the increased cost of conveyance, as well as in risk and in packing, is greater than a hasty observer can have any idea of. A tree, for example, which is twice the height and diameter of another, is greater in weight in a cubic ratio. If a hundred of the smaller weigh two hundred pounds, one hundred of the larger will weigh eight hundred pounds, or nearly half a ton—the cube of two being eight. A single season's growth will often make this difference in the nursery—but many years, after being checked by removal when large. There seems, indeed, to be every reason why trees should be removed small, and everything against the practice of leaving the work till they attain large size. Sir Joshua Reynolds said, if he were to paint a picture of Folly, it would be by representing a boy climbing over a high wall with an open gate close at

his side. Had he lived now, he might do it with equal effect, by representing a purchaser selecting large trees at a nursery, and rejecting the young thrifty ones.

There is only one instance in which the larger trees can have any advantage, or can maintain it for two or three years; and this is, where both large and small are treated with total neglect after setting out, so as barely to survive and not to grow at all.—Both remaining stationary, the larger ones will of course maintain their superiority. But all good cultivators discard such treatment.

The practice of copying English customs, has in this case had an especially pernicious effect. In Britain, the moist climate favors the removal of larger trees than can be safely transplanted here. The experiments of Sir Henry Stewart, in Scotland, in manufacturing a park of trees to order, thirty or forty feet high, and the publication of a work giving the details of his experiment, have done a great deal of harm. The park, after the first year or two, presented a very shabby, thriftless and stunted appearance; but even while this practice was at the height of its popularity, that far-seeing and skillful culturist, J. C. Loudon, asserted, that with five years' time, and with deeply trenched land, he would agree to produce a finer effect with small trees, subjected to the best treatment, than any that could possibly be accomplished by the removal of large ones at the same time.

THE BURDOCK AND THE VIOLET.

It came up in the garden, that burdock, just behind the violets and close to the rose bushes. It was in the corner close up to the fence, and we said we would let it stay, and it should have all the kind care and the gentle attention that the roses and the violets had. Roadside burdocks, we knew were coarse, vile things, with their dusty leaves, and their sharp burs ever adhering to the passers-by, and we would like to see what a garden burdock would be like; whether it would be bright, and fresh, and delicate for growing in such sweet company, so we were merciful and let it stay.

And it grew among the roses and the violets, and gentle hands watered it often, and the earth was softened about the roots, just as for its fairer neighbors; but it waited not for them in its progress upwards. It shot up, rank and tall, and its wide leaves spread all abroad, and threatened to cover up and obscure its less assuming neighbors. And at last the blossoms came. They were large and strong, and armed with keen thorns, and the flowers changed into burs, and they reached out their thorny fingers and grasped the passer-by, and the white dust lay thick on the rough, woolly leaves, and the seeds flew out on the wind, to seek lodging-places, where in another year, a new crop should find foothold and sustenance.

A little violet crept up through the fence and looked up brightly beside the hard and dusty street, and we said we will let it grow there, and so it grew. Water, it had none, except the celestial fountains; care, it had none, except from sunshine and sweet dews and the kindly glances of the passers-by; yet there it lived and bloomed sweetly, "wasting its sweetness on the desert air." Its green leaves were as green as its cherished kindred of the flower-bed, and its blue eyes reflected as hopefully as the blue of the summer sky.

Domestic Economy, Recipes, &c.

[We thank our fair friend who so kindly sent us the following recipe for making Apple Float. We assure her it is our intention to continue this department of our journal, so long as we have the honor of presiding over it. All we want is, that the good housewives of the South will aid us to make it interesting, by sending us such recipes as their experience has proved to be good.—PUB.]

APPLE FLOAT.—Pass nearly a pint of fresh stewed apples through a seive, sweeten to your taste—beat up to a foam the whites of two eggs, stir it into the apples—float it on cream or milk, in a glass dish, and grate nutmeg over the top.

CURE FOR CATARRH.—The following simple remedy has been used with great success by one long and severely troubled with this annoying complaint:

Take, say one part pulverized loaf-sugar to two parts pulverized camphor, and mix them thoroughly together, and use as often as the patient wishes, in the form of snuff. This simple remedy, followed for a few months, has effected a cure in the case above referred to, entirely beyond expectation. Should the camphor be too powerful or not enough so, reduce or add a small quantity, as the case may require, as it is desirable that camphor should be the principal agent.

A GOOD CHICKEN-PIE.—Boil the chicken until tender, season with butter, salt, pepper, and two or three slices of pork. Prepare a crust by mixing one cup of cream and two of buttermilk, two and a half teaspoonfuls saleratus, and two teaspoonfuls salt into flour until it is stiff enough to roll. Cover the sides and bottom of the pan in which you wish to bake it, put in the chicken with a part of the broth; cover with the rest of your dough and bake three-quarters of an hour. Thicken the rest of the broth, add a little more butter, and you will have a good gravy.

MINNESOTA PRESEVES.—Take good full grown tomatoes, just before they begin to turn, slice in three pieces, (discarding the ends;) prepare your syrup the same as for other fruit, (pound for pound,) let it come to a boil, drop in the fruit, simmer till clear, season with lemon; then remove your fruit, boil down the syrup to the consistency of molasses, and when cold pour over the fruit. This mode of preserving tomatoes has been pronounced superior to any other, by those who know what is good.

DOUGHNUTS.—Two cups sugar; 1 egg; 1 teaspoon saleratus; 1 teaspoon salt; 1 nutmeg; $\frac{1}{2}$ pint cream; $\frac{1}{2}$ pint buttermilk—cut in rings and fry.

QUEEN'S CAKE.—Two cups of sugar; 1 of butter; 1 of buttermilk; 4 of flour; 4 eggs; 1 teaspoon saleratus; 1 nutmeg; 1 pound raisins.

SODA CAKE.—Two cups loaf sugar; $\frac{2}{3}$ cup of butter; 1 of sweet milk; 1 spoonful cream tartar; $1\frac{1}{2}$ spoons soda; the whites of 5 eggs beat to a stiff froth.

DRIED TOMATOES.—Take ripe tomatoes and scald them in the usual way, and strip off the skins, or mash and squeeze them through a seive, then stew the pulp slowly, so as to evaporate as much as possible, without burning, then spread it on plates, and dry it in a slow oven or hot sun. When wanted for use, you have only to soak and cook a few minutes, and serve it up just as you would tomatoes stewed fresh from the garden.

BEEF PIE.—Take nice white potatoes, pare and slice thin, boil in just water enough to cover them. When done, have ready the paste, put in a deep dish, place layers of potatoes and beef, (which must also be cut in small, thin slices,) alternately until the dish is full, then cover with a nice crust, and bake thirty-five minutes. To be served warm. Call in your papa, husband or lover, as the case may be, and try it.

CRULLERS.—Take seven spoonfuls of coffee-sugar and seven eggs well beaten, or a spoonful of sugar to each egg, more or less—add a little salt, and season to your taste. Fry in nice white lard, until a light brown. A quarter of a dried apple put in the fat, while frying, will prevent them getting too brown.

STARCH POLISH.—Take one ounce of spermaceti, one ounce of white wax; melt and run it into a thin cake on a plate. A piece the size of a quarter dollar, added to a quart of prepared starch, gives a beautiful lustre to the clothes, and prevents the iron from sticking.

AN EXCELLENT PICKLE FOR BUTTER.—One pail of water, two quarts of fine salt, one and a quarter pounds loaf sugar, two ounces saltpetre; well boiled and skimmed. Cover the butter entirely with this pickle, and it will keep sweet the year round.

BLACK TOPS—SIMPLE RECEIPTS.—Halve and core some large apples, lay them in a shallow pan, and sift white sugar over them. Bake them until tender, make a sauce of one glass of wine to one glass of water, boiled, sweeten to taste.

MOLASSES PIE.—Make a good paste and line a dish with it, fill up the dish with molasses, in which stir a spoonful ginger and vinegar, slice a large lemon or orange in it; 1 teaspoonful cinnamon; cover with paste and bake.

COCOA-NUT DROPS.—Take the white meat of a cocoa-nut and grate it; the whites of four eggs; half a pound white sugar; a teaspoonful essence of lemon—make a batter, drop on buttered paper, and bake.

GINGER COOKIES.—Two cups of molasses; 1 of butter; 1 tablespoon ginger; $1\frac{1}{2}$ teaspoons saleratus dissolved in a cup water; 2 teaspoons of alum dissolved in $\frac{1}{2}$ cup water.

GINGER SNAPS.—One and a half cups of molasses; $\frac{1}{2}$ cup of sugar; 1 of butter; 2 tablespoons of ginger; 1 teaspoonful of soda dissolved in a cup warm water.

SNOW-BALL CAKES.—One cup of sugar; 1 of butter; $\frac{1}{2}$ cup buttermilk; 1 teaspoon soda; the whites of 3 eggs beat to a froth—bake in small tins.